SONY

DIGITAL VIDEOCASSETTE PLAYER

DNW-A65/A65P

BETACAM SX

OPERATION MANUAL English

1st Edition (Revised 3)

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

This apparatus must be earthed.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.

If used in USA, use the UL LISTED power cord specified below.

DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type SJT, three 16 or 18 AWG wires
Length	Less than 2.5 m (8 ft 3 in)
Rating	Minimum 10 A, 125 V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European standards:

EN60065: Product Safety

EN55103-1: Electromagnetic Interference (Emission)

EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment (s):

E1 (Residential), E2 (Commercial and light industrial), E3 (Urban outdoors) and E4 (Controlled EMC environment ex. TV studio)

Pour les clients européens

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) et à la Directive sur les basses tensions (73/23/CEE) émises par la Commission de la Communauté européenne.

La conformité à ces directives implique la conformité aux normes européennes suivantes:

- EN60065: Sécurité des produits
- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants:

E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé ex. studio de télévision).

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt sowohl die EMV-Direktive (89/336/EEC) als auch die Direktive Niederspannung (73/23/EEC) der EG-Kommission.

Die Erfüllung dieser Direktiven bedeutet Konformität für die folgenden Europäischen Normen:

- EN60065: Produktsicherheit
- EN55103-1: Elektromagnetische Interferenz (Emission)
- EN55103-2: Elektromagnetische Empfindlichkeit (Immunität)

Dieses Produkt ist für den Einsatz unter folgenden elektromagnetischen Bedingungen ausgelegt:

E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio)

Table of Contents

Chapter 1 Overview

1-1 Features 1-1
1-2 Example System Configurations 1-3

Chapter 2 Location and Function of Parts

2-1 Control Panels 2-1
2-1-1 Upper Control Panel 2-2
2-1-2 Lower Control Panel 2-4
2-1-3 Subsidiary Control Panel 2-11
2-2 Connector Panel 2-14

Chapter 3 Preparations

3-1 Connections to External Devices 3-1
3-1-1 Connections for Digital Output Signals 3-1
3-1-2 Connections for Analog Output Signals 3-2
3-1-3 Connecting a Reference Signal 3-3
3-2 Setup 3-4
3-3 Superimposed Character Information 3-5
3-4 Cassettes 3-7
3-4-1 Cassette Types 3-7
3-4-2 Inserting and Ejecting Cassettes 3-7

Chapter 4 Playback

4-1 Preparations for Playback 4-1
4-1-2 Switch Settings 4-1
4-1-2 Time Data Selection 4-1
4-2 Playback/Feed Play Procedures 4-2
4-2-1 Normal Playback 4-2
4-2-2 Playback in Jog Mode 4-3
4-2-3 Playback in Shuttle Mode 4-3
4-2-4 Playback in Variable Mode 4-4
4-2-5 Playback Using the Capstan Override Function 4-4
4-2-6 Carrying Out Playback in Feed Mode 4-5
4-3 Dynamic Motion Control (DMC) Playback 4-5
4-3-1 Overview 4-6
4-3-2 Storing a Varying Playback Speed in Memory 4-6
4-3-3 Executing DMC Playback 4-7

Chapter 5 Shot Mark Function

5-1 Overview 5-1
5-2 Shot Mark Operation Menu 5-2
5-3 Shot Mark Operations 5-3
5-3-1 Reading Shot Marks 5-3
5-3-2 Writing Post Marks 5-3
5-3-3 Shot Mark List Operations 5-4
5-3-4 Cueing Up to Shot Marks 5-6
5-3-5 Reading in Shot Data 5-6
5-3-6 Sorting Shot Marks 5-7

Chapter 6 Menu System

6-1 Menu System Configuration 6-1
6-2 Basic Menu 6-1
6-2-1 Items in the Basic Menu 6-1
6-2-2 Basic Menu Operations 6-4
6-3 Extended Menu 6-9
6-3-1 Items in the Extended Menu 6-9
6-3-2 Extended Menu Operations 6-19

Table of Contents

Chapter 7 Maintenance and Inspection

7-1 Removing a Cassette When Tape Slack Occurs 7-1
7-2 Head Cleaning 7-1
7-3 Moisture Condensation 7-2
7-4 Digital Hours Meter 7-3

Appendix

Specifications A-1

Index I-1

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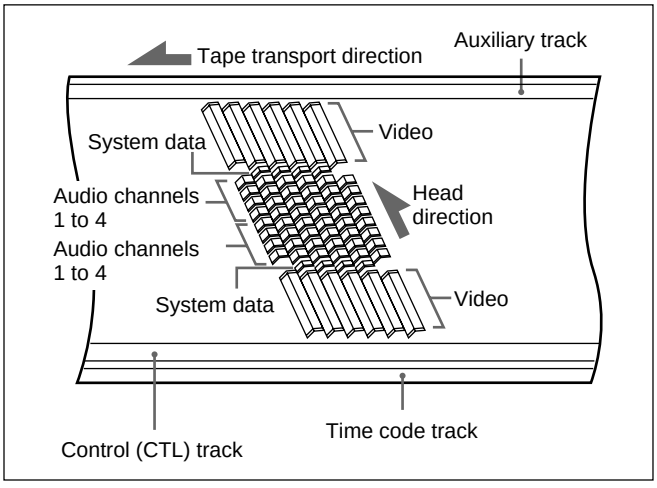
1-1 Features

The DNW-A65/A65P is a digital videocassette player, based on the Betacam SX format.
This unit not only offers digital playback, but can also play back tapes recorded in the conventional analog Betacam format.
The following are some of the features of the system.

Betacam SX format

The Betacam SX format was developed as a digital version of the Betacam SP format, and is a digital VTR format supporting nonlinear editing systems and server systems. Compared with analog Betacam, the Betacam SX format reduces the tape speed to approximately one-half. The drum rotates at 75 revolutions per second, recording two frames of video data and four channels of digital audio in ten diagonal tracks. The longitudinal control and time code tracks are the same as in the analog Betacam format.



Head configuration

In addition to digital playback heads for Betacam SX, the unit also has analog playback heads for Betacam SP. There are eight digital playback heads in total.

Digital signal processing

This unit processes digital signals conforming to 4:2:2 component digital D-1 format.

High image quality, high audio quality, high reliability

Even with a low data rate, playback with high image quality and high audio quality is achieved. The unit also has a powerful error-correcting system.

Data compression by interframe encoding

Betacam SX format VTRs performs data compression by MPEG-2 interframe encoding conforming to 4:2:2 Profile @ Main level. The data rate is reduced by a factor of 10.

Playback compatibility with Betacam/ Betacam SP

This unit can play tapes recorded in Betacam/Betacam SP format. This makes for efficient use of existing material in Betacam/Betacam SP format.

Wide range of output signals

You can use the following wide range of output signals.

Signals	Standard or option
Analog video	Fitted as standard (composite and component)
Analog audio (4 channels)	Fitted as standard
AES/EBU digital audio	Fitted as standard
SDI [a] video/audio	Fitted as standard
SDTI [b] video/audio	Option (BKNW-118/BKNW-124) [c]
Time code	Fitted as standard

a) Serial Digital Interface
b) Serial Data Transport Interface
c) Either the BKNW-118 or the BKNW-124 can be attached for SDTI signal output.

DMC (dynamic motion control) playback

You can save a varying playback speed, in the range –1 to +2 times normal speed, for any section of a tape, and perform automatic playback with this varying speed.

Menu-based setup

Initial settings for the unit's operating condition, the interfaces with connected equipment, and so forth can be made by menu operations on the front panel of the unit.

Wide range of indications

In addition to the LED display which shows the operating status and current settings of this unit and connected equipment, a fluorescent display displays numerical values including time code, user bits, DMC playback IN and OUT points, DMC playback durations, error messages and setup menu information.

Incorporation of a time code generator

Playback time code can be output as it is or after regeneration by a built-in time code generator.

Connection to external control devices

It is possible to connect a BVE-900/910/2000/9000/9000P/9100/9100P or other BVE-series editor, a control and monitoring computer, a BVR-50/50P remote controller for the built-in digital video processor, and so forth.

Economy

- You can use a variety of tapes, including low-priced tapes for UVW-series VTRs and tapes for Betacam SP or Betacam SX format.
- The design needs minimal maintenance, and requires no daily maintenance or checks. The drum and other components have reduced maintenance costs.

Rack mounting

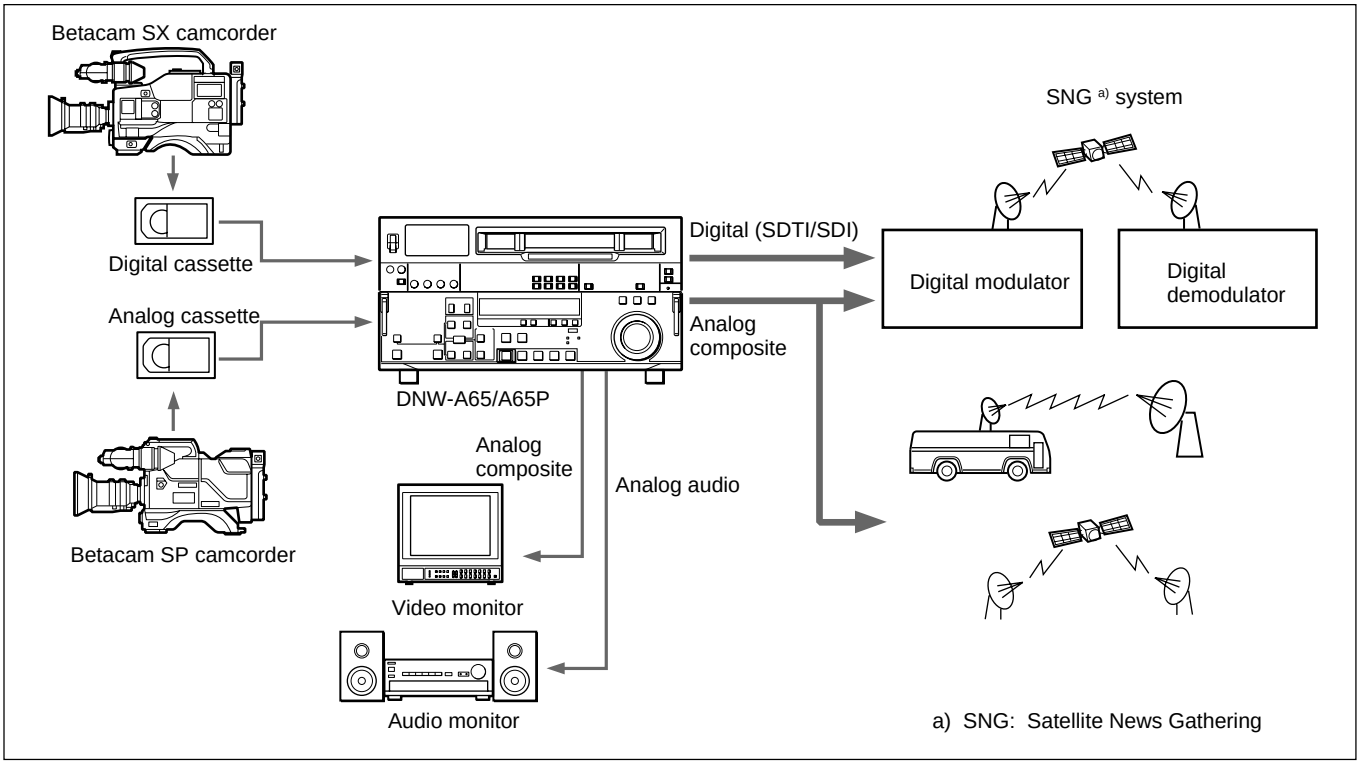
The unit can be mounted in an EIA standard 19-inch rack.

For details of rack mounting, refer to the Maintenance Manual Part 1.

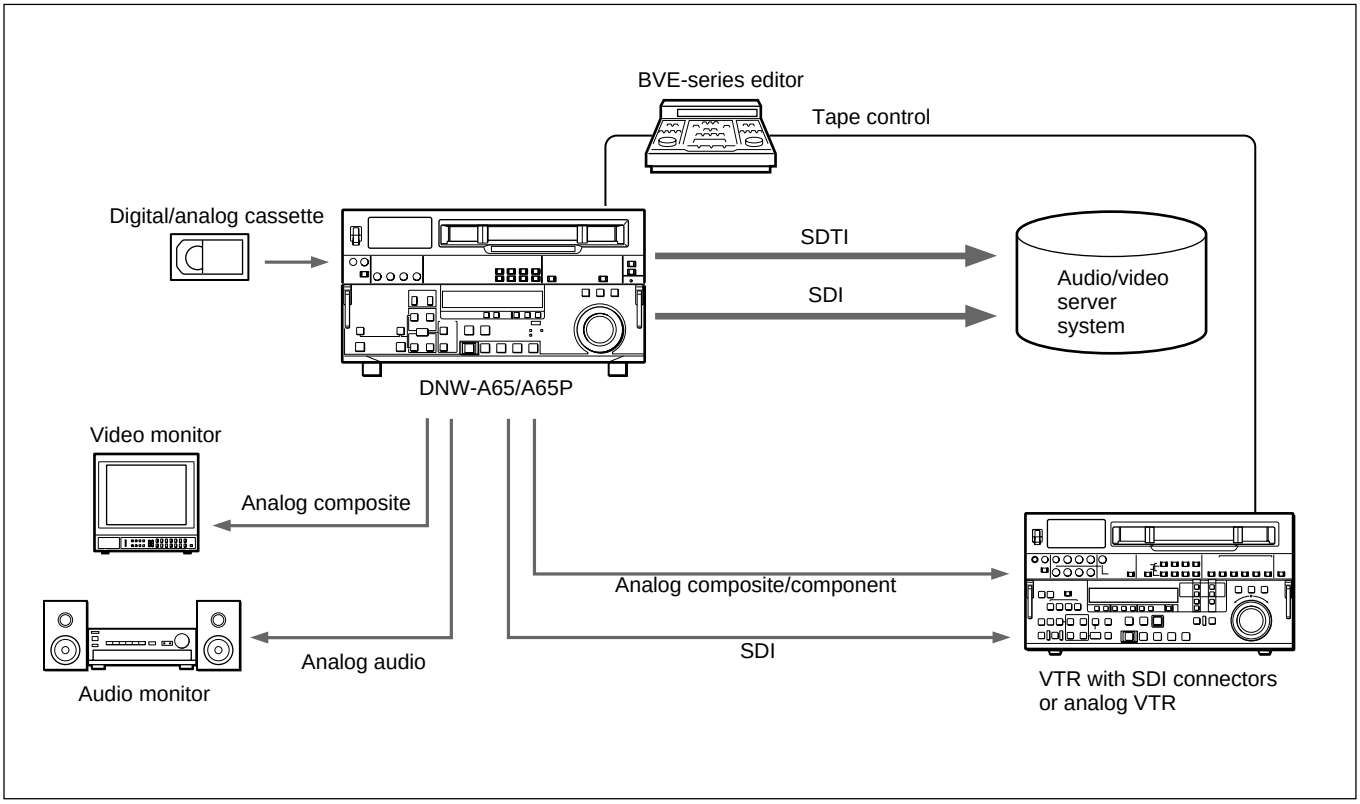
1-2 Example System Configurations

The following conceptual diagrams show examples of use in an outside broadcast van or local station and within a broadcasting station.

• Operation in an outside broadcast van or local station

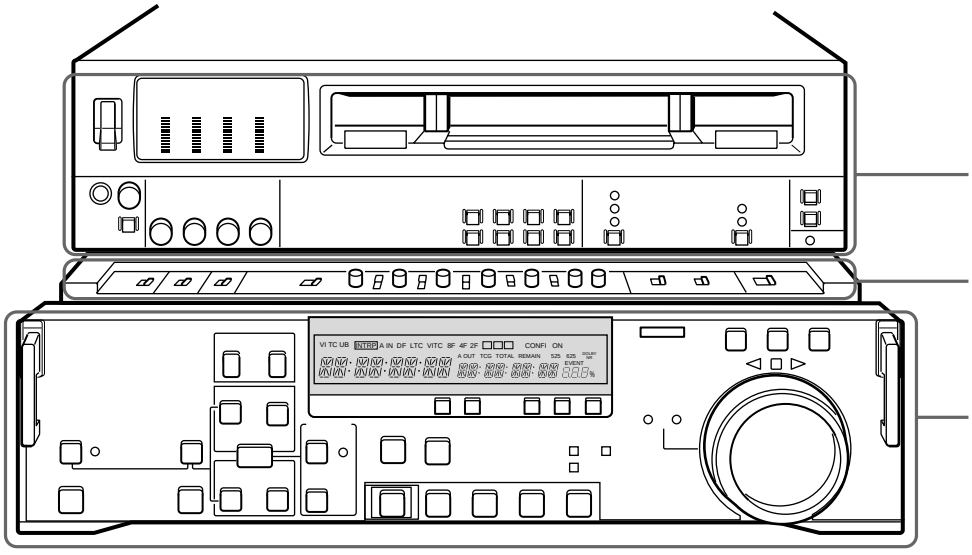


• Operation in a broadcasting station



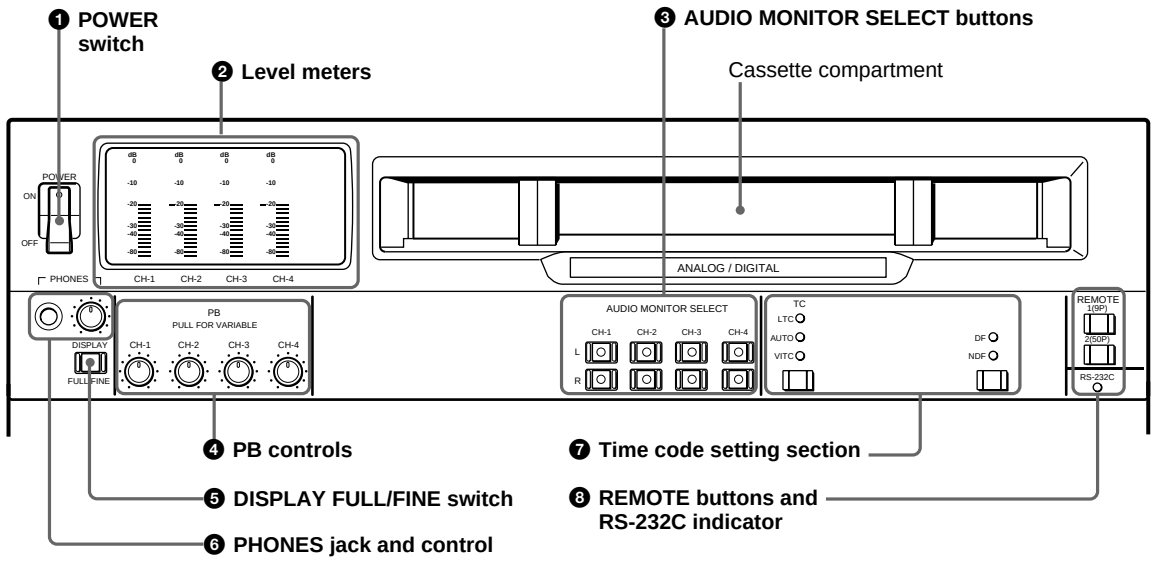
2-1 Control Panels

There are three control panels, as follows:
- Upper control panel
- Lower control panel
- Subsidiary control panel



a) To reveal the subsidiary control panel, pull the lower control panel forward.

2-1-1 Upper Control Panel



❶ POWER switch

This powers the unit on and off. When the unit is powered on, the level meters ❷ and the fluorescent display in the lower control panel light.

To power the unit off, press the side of the POWER switch marked “OFF”.

❷ Level meters

These show the audio playback levels of channels 1 to 4.

There are two modes for audio level indications: FULL and FINE, selected by the DISPLAY FULL/FINE switch ❺.

❸ AUDIO MONITOR SELECT buttons

Press the buttons in the L and R rows to select the audio signal channels output from the MONITOR OUTPUT L and MONITOR OUTPUT R connectors. You can press two or more buttons simultaneously in each row, turning them on, to monitor an output produced by mixing the selected channels.

❹ PB (playback) controls

These adjust individually the playback levels on channels 1 to 4.

During playback, pull out the control knobs and adjust the level while monitoring the audio level indication on the level meters ❷.

When the control knobs are pushed in, the playback levels return to the preset levels, and cannot be adjusted.

❺ DISPLAY FULL/FINE switch

This switches the audio level meter ❷ display as follows:

FULL: The display covers the range – 60 dB to 0 dB or – 40 dB to +20 dB as selected using extended menu item 806.

In this mode the segment of the display corresponding to the current audio level and all lower segments light.

FINE: The display is enlarged, with a step of 0.25 dB. A segment indicating the reference level lights.

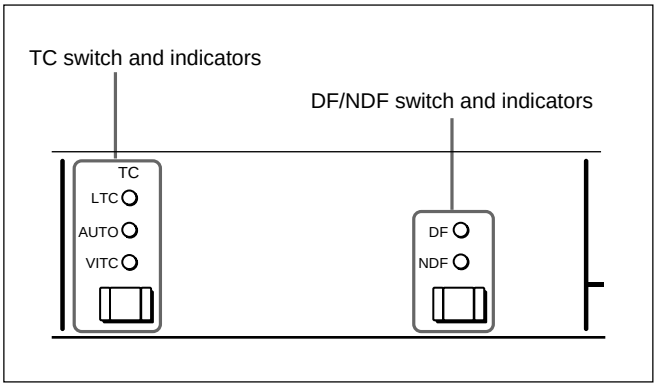
In this mode only the segment of the display corresponding to the current audio level lights. If the audio level exceeds the maximum display level, the top segment flashes, and if the audio level goes below the minimum display level, the bottom segment flashes.

❻ PHONES jack and control

Connect stereo headphones with an impedance of 8 ohms, to monitor the sound during playback.
The control knob adjusts the volume.
It is possible to make a setting so that the output volume from the MONITOR OUTPUT connectors is controlled simultaneously.

In order that the output volume from the MONITOR OUTPUT connectors can be controlled simultaneously, an internal board switch setting is required. For details, refer to the Maintenance Manual Part 1.

❼ Time code setting section



TC (time code) switch and indicators

This switch selects the time code displayed in the lower control panel in the sequence: LTC [1] → AUTO → VITC [2]. The indicator corresponding to the selection lights.
When AUTO is selected, the time code displayed is VITC when the tape transport speed is up to half-speed, and LTC when it is more than half-speed.

DF/NDF (drop-frame/non-drop-frame) switch and indicators

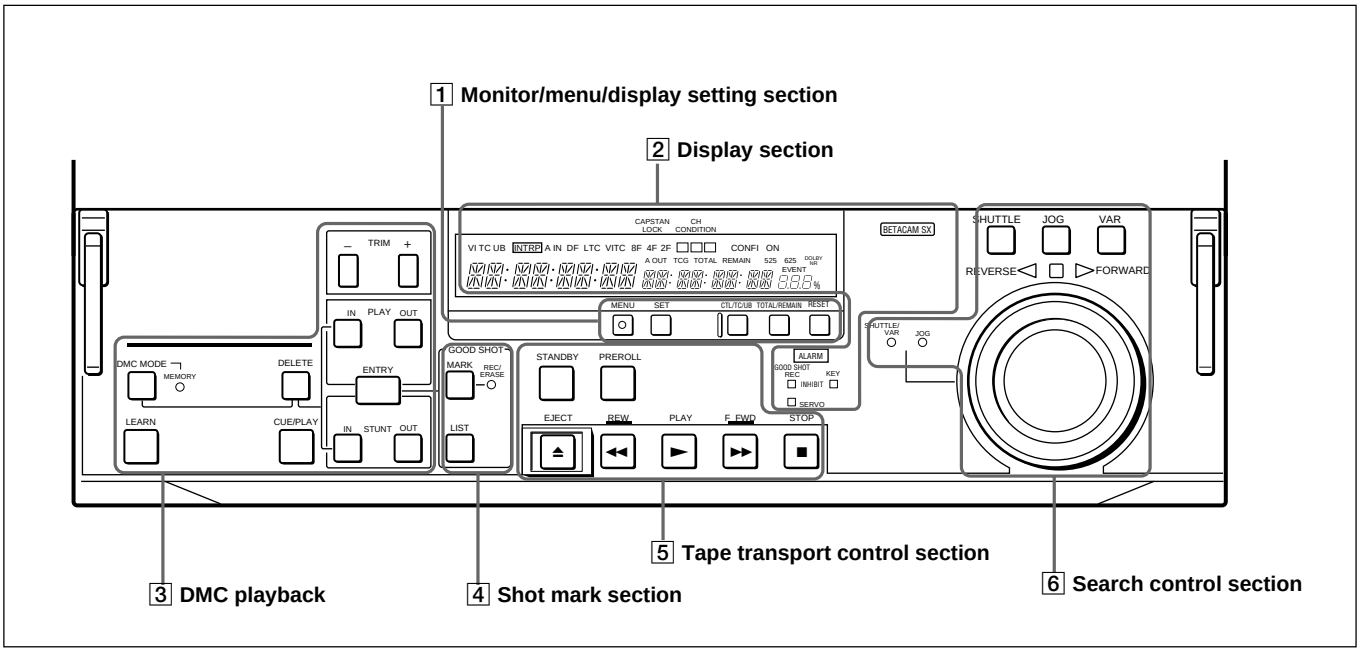
In a 525/60 system, this switch selects the mode of advancing the CTL counter.
DF: Drop-frame mode.[3]
NDF: Non-drop-frame mode.[3]
The indicator corresponding to the selection lights.

❽ REMOTE buttons and RS-232C indicator

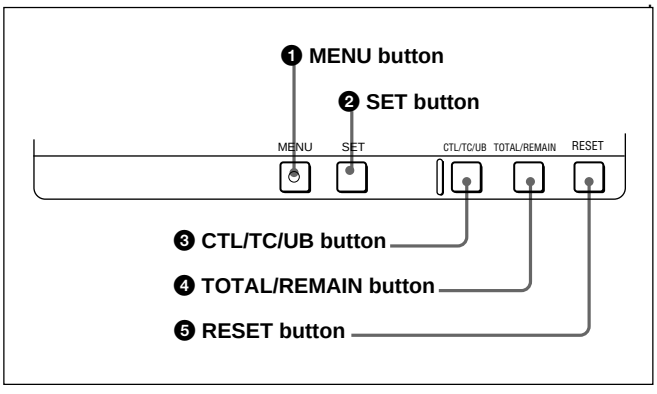
Press one of these buttons to select the device controlling this unit.
1(9P): This unit is controlled by the device connected to the REMOTE1-IN(9P) or REMOTE1-OUT(9P) connector. The button lights.
2(50P): This unit is controlled by the device connected to the REMOTE PARALLEL I/O(50P) connector. The button lights.
RS-232C indicator: This indicator lights when this unit is controlled through the RS-232C connector.

1) LTC: abbreviation of Longitudinal Time code. This time code is recorded on a longitudinal track on the tape. Reading is unreliable at low speeds, and not possible at all during still playback.
2) VITC: abbreviation of Vertical Interval Time code. This is inserted in the vertical blanking interval and recorded on the video tracks. It can be read at low speeds and during still playback, but not during high-speed playback.
3) Drop-frame/non-drop-frame mode:
In the NTSC system, the actual frame rate is 29.97 frames per second. There is therefore a cumulative discrepancy between the actual frame rate and the 30 frames per second rate on which time code is based. In drop-frame mode, except once every 10 minutes, the first two frames are skipped at the beginning of each minute to keep the time code values in step with actual elapsed time.
In non-drop-frame mode, the correction is not carried out, and there is a discrepancy of about 86 seconds per day between actual elapsed time and time code values.

2-1-2 Lower Control Panel



1 Monitor/menu/display setting section



❶ MENU button

Use this button for setup menu operations. Pressing this button, turning it on, displays setup menus in the fluorescent display of the display section 2. Press the button once more to exit from the menu display.

For details of setup menu operations, see Chapter 6, "Menu System".

❷ SET button

Use this button in setup menu operations.

For details of setup menu operations see Chapter 6, "Menu System".

❸ CTL/TC/UB button

This selects the value displayed in the fluorescent display in the following sequence: CTL, TC, UB. As the display changes, the corresponding indicators over the fluorescent display also show the status.

Time code display value selection and display contents

Display selection	Value displayed	Indicator status
CTL	Tape running time (hours, minutes, seconds, frames) computed from the CTL (control) signal recorded on the tape during playback.	TC and UB indicators are both off.
TC	Playback time code read by the internal time code reader. a)	The TC indicator lights and the UB indicator goes off.
UB	User bit value inserted in the playback time code. a)	The UB indicator lights and the TC indicator goes off.

a) The selection of LTC or VITC is made by the TC switch. When VITC is selected, the VITC indicator over the TC switch lights.

❹ TOTAL/REMAIN button

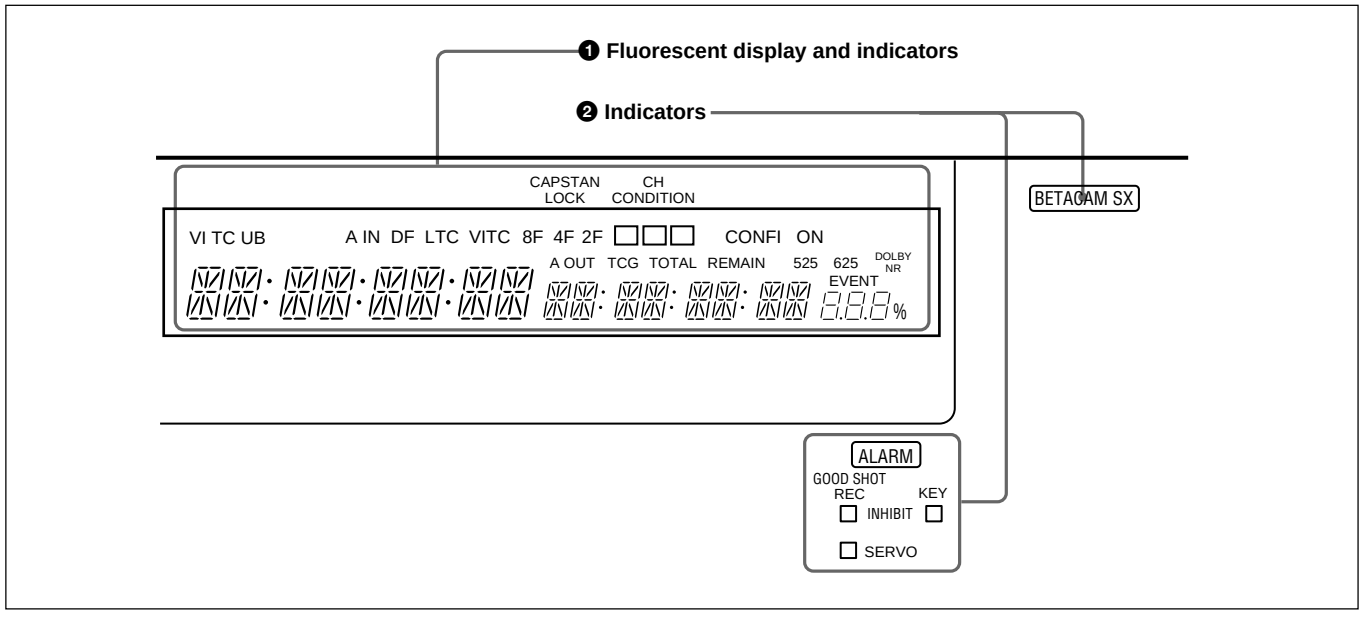
Press this button to switch between a TOTAL indication or REMAIN (remaining) indication on the fluorescent display. According to the selection, the TOTAL indicator or REMAIN indicator above the fluorescent display lights.

For details of the TOTAL or REMAIN indicators, see the next page.

❺ RESET button

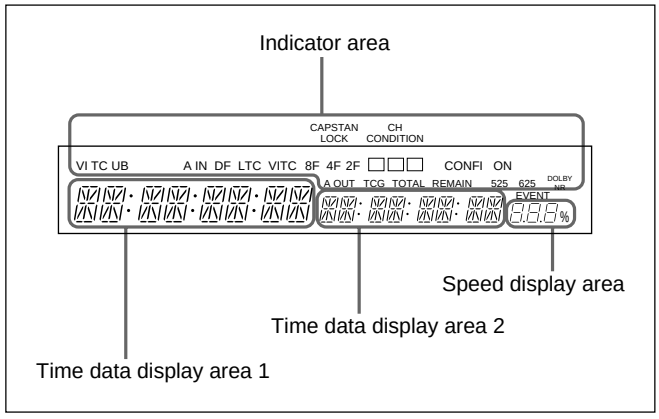
To reset a CTL value displayed in the fluorescent display, hold this button down.
Resetting the CTL value erases all DMC playback points.

2 Display section



❶ Fluorescent display and indicators

This comprises a time data display area 1, a time data display area 2, and a speed display area provided by the fluorescent display, and also a number of indicators.



Time data display area 1

Normally this displays a CTL count, time code value, or user bit value according to the setting of the CTL/TC/UB button in the monitor/menu/display setting section 1 and the setting of the TC switch in the upper control panel.
It is also used to display a STUNT IN point (or PLAY IN point), a duration, error messages, setup menus, and so forth.

For details of the selection of CTL count, time code value, or user bit value see the description of the CTL/TC/UB button (previous page).

Time data display area 2

This shows a TOTAL time indication or REMAIN (remaining) time indication according to the setting of the TOTAL/REMAIN button in the monitor/menu/display setting section 1. Depending on the display, the corresponding one of the TOTAL and REMAIN indicators immediately above lights.

TOTAL: Time value representing the total tape length.

REMAIN: Time value representing the remaining tape length.

These are approximate values calculated on the basis of the detected tape diameter. They are not precise to units of seconds.

When no cassette has been loaded or the loaded cassette has not started running, or when the remaining tape length has not yet been calculated because the tape started running only seconds before, "---------" appears as the TOTAL/REMAIN indication.

This area is also used to display a STUNT OUT point (or PLAY OUT point), a duration, error messages, setup menus, and so forth.

Speed display area

This displays the speed during feed or tape speed override play.

Indicator area

This includes the following indicators.

- **VI (VITC) indicator:** When a VITC time code value or VITC user bit value is displayed in the time data display area 1, this indicator lights together with the TC or UB indicator.
- **TC (time code) indicator:** This lights when a time code is displayed in the time data display area 1.
- **UB (user bits) indicator:** This lights when a user bit value is displayed in the time data display area 1.
- **A IN indicator:** When a STUNT IN point is displayed in time data display area 1, the IN indicator lights, and when a PLAY IN point is displayed, the A indicator lights in addition to the IN indicator.
- **DF (drop-frame) indicator:** This lights when a displayed time code value is in drop-frame mode.
- **LTC, VITC indicators:** Regardless of the display in the time data display area 1, these indicators light when the corresponding time code values are being read.
- **CAPSTAN LOCK 8F/4F/2F (8 fields/4 fields/2 fields) indicators:** The indicator lights corresponding to the mode selected by the CAPSTAN LOCK switch on the subsidiary control panel or in setup menu item 106.
- **CH (channel) CONDITION indicator:** A three-color indicator shows the state of the playback signal.
  Green: The state of the playback signal is good.
  Yellow: The playback signal is somewhat deteriorated, but playback is possible.
  Red: The playback signal is deteriorated. When this indicator remains on, head cleaning or an internal inspection is necessary.
- **A OUT indicator:** When a STUNT OUT point is displayed in time data display area 2, the OUT indicator lights, and when a PLAY OUT point is displayed, the A indicator lights in addition to the OUT indicator.
- **TOTAL, REMAIN indicators:** When the "TOTAL" time is displayed in time data display area 2 the TOTAL indicator lights, and when the "REMAIN" time is displayed in time data display area 2 the REMAIN indicator lights.
- **525, 625:** The indicator showing the number of scan lines for the television standard selected using basic menu item 013 lights (NTSC: 525 scan lines, field frequency 60 Hz; PAL: 625 scan lines, field frequency 50 Hz).
- **DOLBY NR indicator:** This lights when the Dolby noise-reduction [1)] circuit is functioning.

1) Dolby noise-reduction: Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ⧫⧫ are trademarks of Dolby Laboratories Licensing Corporation.

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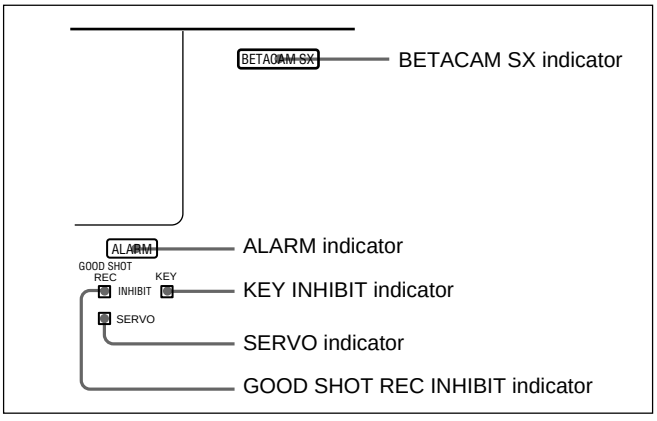
❷ Indicators



BETACAM SX indicator

When playing back a tape recorded in Betacam SX format, this indicator lights.

ALARM indicator

This lights when a hardware error is detected on the unit, and goes off when the error is resolved.
When this indicator is lit, an error message appears in the fluorescent display. If you are using the SDI OUTPUT 3 (SUPER) or COMPOSITE VIDEO OUTPUT 3 (SUPER) connector, then when the CHARACTER switch in the subsidiary control panel is set to ON, the error message also appears on the monitor screen.

KEY INHIBIT indicator

This indicator lights when the KEY INHIBIT switch on the subsidiary control panel is set to ON.

SERVO indicator

When the drum servo and capstan servo are locked [1], this indicator lights.

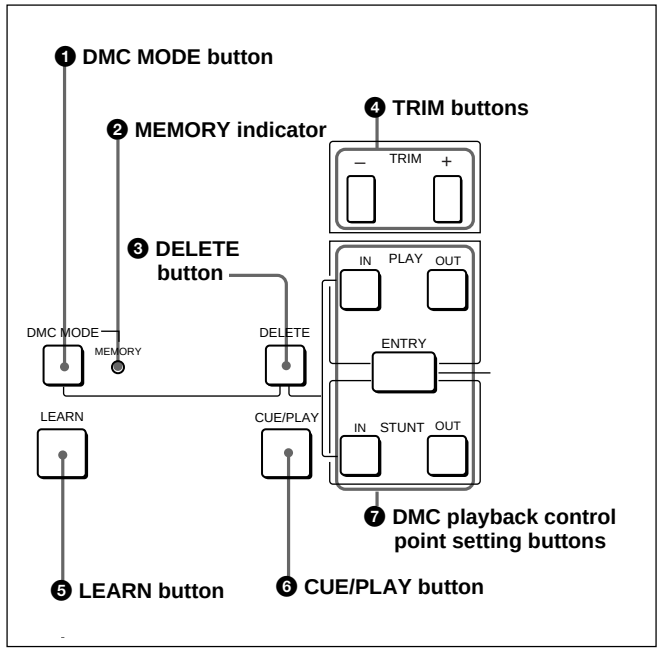
GOOD SHOT REC (recording) INHIBIT indicator

This indicator is on or off according to the combination of the setting of the GOOD SHOT switch on the subsidiary control panel and the record inhibit plug on the cassette, as shown in the following table. When this indicator is on, recording shot marks on tape is prohibited.

GOOD SHOT REC INHIBIT indicator indications

GOOD SHOT switch position	State of the record inhibit plug on the cassette	GOOD SHOT REC INHIBIT indicator state
REC INHIBIT	Record inhibit/permit	Lit
REC	Record inhibit	Lit
	Record permit	Off

3 DMC playback control section



❶ DMC MODE button

Use this button when you make settings for DMC playback and when you carry out playback in feed-mode.

See page 4-6 for details of DMC playback, and see page 4-5 for details of playback in feed mode.

❷ MEMORY indicator

When memorizing the playback speed using the DMC MODE button, this indicator flashes as the playback speed is captured to memory, and lights continuously once the speed is captured.

1) Servo lock: This refers to the synchronization of the phase of the drum rotation and the reference signal for the tape transport position, so that the video heads can trace the same pattern on the tape for playback or recording.

❸ DELETE button
This deletes an existing DMC playback control point. Hold down this button and press the STUNT IN, STUNT OUT, PLAY IN, or PLAY OUT button which is lit, indicating an existing DMC playback control point, to delete the corresponding DMC playback control point. The button either goes off or flashes. When the button flashes, it is necessary to set the deleted DMC playback control point again.

❹ TRIM buttons
Use these buttons to trim a DMC playback control point, once set, to single-frame precision.
Hold down the STUNT IN, STUNT OUT, PLAY IN, or PLAY OUT button, and press one of these buttons. The + button advances the corresponding edit point by one frame, and the – button sets it back by one frame. Pressing one of these buttons while holding down the PLAY button adjusts the tape speed by +8% or –8% correspondingly. (Capstan override function)

❺ LEARN button
After setting a speed variation start point (STUNT IN point) and a speed variation end point (STUNT OUT point), pressing this button makes the tape start running. You can then use the search dial to vary the tape speed, which is automatically stored in memory. After thus storing the tape speed variation in memory, pressing this button starts an automatic playback between the speed variation start and end points at the stored speed.

❻ CUE/PLAY button
After setting an on-air start point (PLAY IN point) and an on-air end point (PLAY OUT point), pressing this button cues up the tape to the on-air start point. The button then starts flashing to indicate that the unit is ready for DMC playback operation. To start DMC playback, press the button again.

❼ DMC playback control point setting buttons

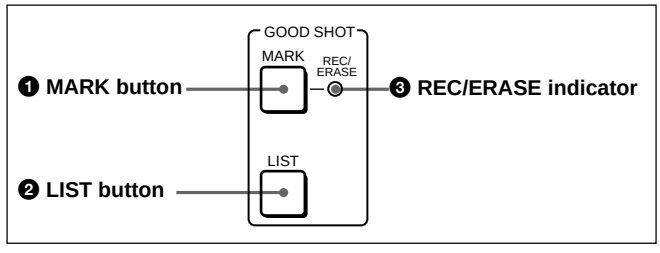
PLAY IN button and PLAY OUT button
To set an on-air start point or on-air end point hold down the PLAY IN button or PLAY OUT button, and press the ENTRY button.
After you have made the setting, pressing the PLAY IN button or PLAY OUT button displays the on-air start point or on-air end point set on the fluorescent display.

STUNT IN button and STUNT OUT button
To set a speed variation start or end point, hold down the STUNT IN or STUNT OUT button, and press the ENTRY button.
After you have made the setting, pressing the STUNT IN or STUNT OUT button displays the speed variation start or end point on the fluorescent display.

ENTRY button
Use this for setting DMC playback control points and so forth.
- To set a speed variation start or end point: Hold down the STUNT IN button or STUNT OUT button, and press this button.
- To set an on-air start or end point: Hold down the PLAY IN button or PLAY OUT button, and press this button.

4 Shot mark section

When using a tape with shot markers recorded, you can read out the good shot marks from the tape, by simultaneously pressing the LIST button and either F FWD button or REW button.

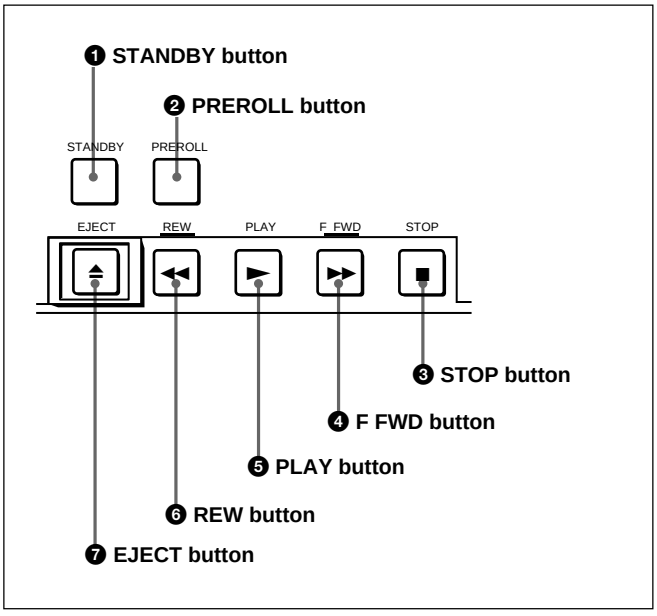


❶ MARK button
Hold this button down for 2 seconds or more, to enable writing, amending, and deleting of shot marks.

❷ LIST button
Use this button to read in and list shot marks.

❸ REC/ERASE indicator
This lights in the state in which writing, amending, and deleting of shot marks is enabled.

5 Tape transport control section



❶ STANDBY button

When a cassette is inserted and this button is off, to put the unit in standby mode, press the button, turning it on.

In standby mode, the drum is rotating and the tape is in contact with the drum. As a result, playback can start immediately.

To end standby mode, press the STANDBY button, turning it off.

If 8 minutes (value can be varied using extended menu item 501) elapse in standby mode, the unit automatically switches out of standby mode to protect the tape.

❷ PREROLL button

Press this button to cue up to the preroll point (before the IN point by the time set as the preroll time) on the tape. You can change or select the preroll time and the state of the unit at the end of preroll ("stop mode" [1)] or still playback mode) using basic menu item 001 or extended menu item 401.

Cuing up DMC playback control points

Hold down the STUNT IN, STUNT OUT, PLAY IN, or PLAY OUT button while pressing this button to cue up to the corresponding DMC playback control point.

❸ STOP button

To stop playback, press this button, turning it on. When you stop playback, the unit switches to still playback mode.

Fault display function

The STOP button flashes when there is no external reference video signal input to the unit.

Note

The STOP button gives no fault display (does not flash) even when the format of the input video reference signal does not correspond to your system (525 or 625). Please remember this when you carry out system switching.

❹ F FWD (fast forward) button

To fast forward the tape, press this button, turning it on.

❺ PLAY button

To start playback, press this button, turning it on.

To operate in capstan override mode

Hold down this button, and turn the search dial.

For details of capstan override mode, see the item relating to the search dial in the next page.

❻ REW (rewind) button

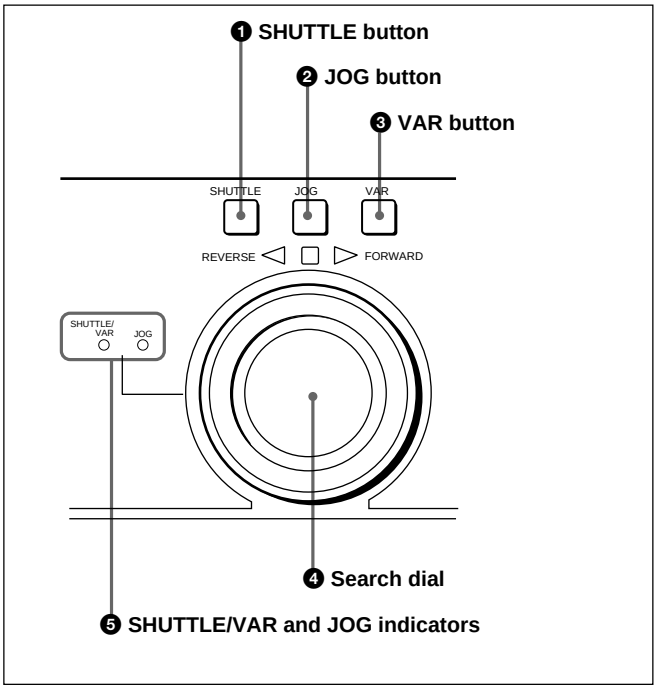
To rewind the tape, press this button, turning it on.

❼ EJECT button

To eject the cassette, press this button. While the cassette is being ejected, this button lights.

1) Stop mode: the state in which the current operation of the unit is stopped, and the STOP button is lit.

6 Search control section



❶ SHUTTLE button

To use the search dial for playback in shuttle mode, press this button, turning it on.

For details of playback in shuttle mode, see the item for the search dial ❹.

❷ JOG button

To use the search dial for playback in jog mode, press this button, turning it on.

For details of playback in jog mode, see the item for the search dial ❹.

❸ VAR (variable) button

To use the search dial for playback in variable speed mode, press this button, turning it on.

For details of playback in variable mode, see the item for the search dial ❹.

❹ Search dial

Turn this to carry out playback in the modes shown in the following table. Turning the dial clockwise lights the ▷ indicator and plays back in the forward direction. Turning the dial counterclockwise lights the ◁ indicator and plays back in the reverse direction. When the tape is stopped, the □ indicator lights.

Pressing the dial toggles between shuttle and jog modes or between variable and jog modes.
You can carry out noiseless playback in the range of –1 times to +2 times normal speed when using a Betacam SX format tape.

Playback modes using the search dial

Playback mode	Operations and functions
Shuttle	Press the SHUTTLE button or the search dial so that the SHUTTLE button lights, then turn the search dial. Playback is carried out at a speed determined by the position of the search dial. The playback speed range is as follows: • Using a Betacam SX tape: –78 to +78 times normal speed • Using an analog Betacam tape: –35 to +35 times normal speed for DNW-A75 or –42 to +42 times normal speed for DNW-A75P The search dial has detents at the still position and at ±5 times normal speed. The maximum shuttle mode playback speed can be changed by changing the setting of item 102 in the extended menu (see page 6-9).
Jog	Press the JOG button or the search dial so that the JOG button lights, then turn the search dial. Playback is carried out at a speed determined by the speed of rotation of the search dial. The playback speed range is –1 to +1 time normal speed: The search dial has no detents.
Variable speed	Press the VAR button, turning it on, then turn the search dial. You can control the playback speed finely (51 steps) in the range of –1 time to +2 times normal speed. The search dial has detents at the still position and at the normal speed position.
Capstan override	Hold down the PLAY button and turn the search dial to adjust the playback speed in the range of ±15%. Use this for phase adjustment between this unit and an external connected device.

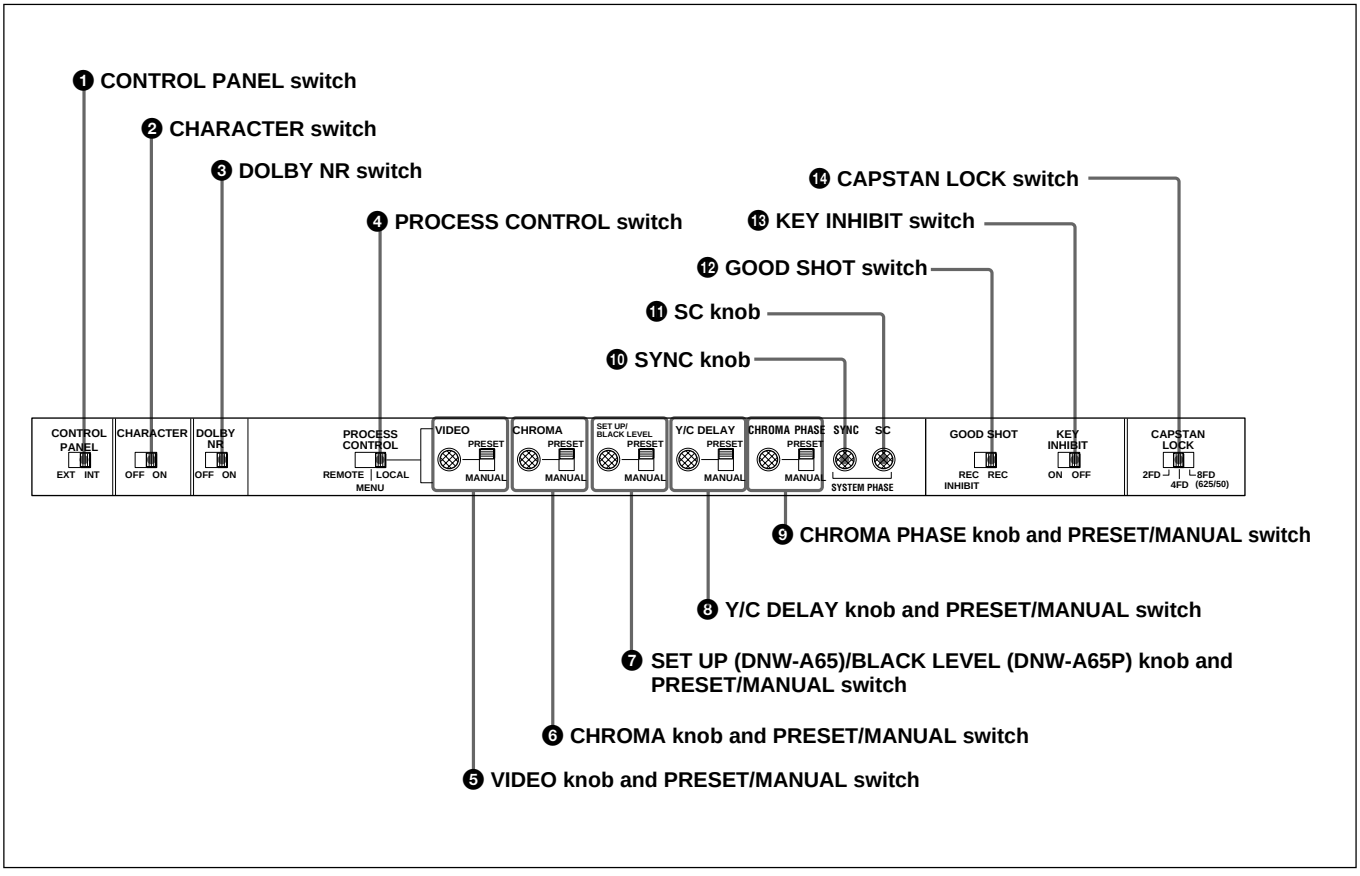
Changing the setting of extended menu item 101 enables you to use the search dial alone to select shuttle/jog/variable speed modes, without using the SHUTTLE, JOG, and VAR buttons.

❺ SHUTTLE/VAR and JOG indicators

When searching in shuttle mode, the SHUTTLE/VAR indicator lights, and when searching in jog mode, the JOG indicator lights.

2-1-3 Subsidiary Control Panel

Pull out the lower control panel to reveal the subsidiary control panel.



❶ CONTROL PANEL switch

Select the state of the control panel when this unit is operated.

INT: When operating this unit by its own control panel.

EXT: When the control panel is detached, to operate this unit remotely by a connection to the CONTROL PANEL connector. This connection requires an optional Control Panel Extension Kit.

The factory default setting is INT.

❷ CHARACTER switch

Select whether or not to superimpose text information such as time code, menu settings, and alarm messages on the video signal output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector and SDI OUTPUT 3 (SUPER) connector.

ON: Superimposed text.

OFF: No superimposed text.

The factory default setting is ON.

❸ DOLBY NR (noise reduction) switch

When using an oxide tape, switch the Dolby noise-reduction system for analog audio on or off.

When using metal tape, the Dolby noise-reduction system is automatically switched on, regardless of the setting of this switch.

ON: Enable the Dolby noise-reduction system for playback of an analog Betacam oxide tape.

OFF: Disable the Dolby noise-reduction system for playback of an analog Betacam oxide tape.

The factory default setting is OFF.

❹ PROCESS CONTROL switch

This selects the method of control of the internal digital video processor.

REMOTE: Select this position to use an optional BVR-50/50P Remote Control Unit for remote control of the internal digital video processor.

MENU: Select this position to use setup menus to change the settings for the internal digital video processor.

LOCAL: Select this position to use the subsidiary control panel to change the settings for the internal digital video processor.

❺ VIDEO knob and PRESET/MANUAL switch

The switch makes the selection described immediately below. When it is set to MANUAL, you can use the knob to adjust the video signal output level.

PRESET: Regardless of the position of the knob, the video signal output level is set to the reference value.

MANUAL: You can adjust the video signal output level in the range ±3 dB.
You can change the adjustment range using extended menu item 714.

❻ CHROMA (chrominance) knob and PRESET/MANUAL switch

The switch makes the selection described immediately below. When it is set to MANUAL, you can use the knob to adjust the chrominance signal output level.

PRESET: Regardless of the position of the knob, the chrominance signal output level is set to the reference value.

MANUAL: You can adjust the chrominance signal output level in the range ±3 dB.
You can change the adjustment range using extended menu item 714.

❼ SET UP (DNW-A65)/BLACK LEVEL (DNW-A65P) knob and PRESET/MANUAL switch

The switch makes the selection described immediately below. When it is set to MANUAL, you can use the knob to adjust the (black) setup level (525/60 system) or black level (625/50 system).

PRESET: Regardless of the position of the knob, the setup level (525/60 system) or black level (625/50 system) is set to the reference value.

MANUAL: You can adjust the setup level (525/60 system) in the range ±30 IRE [1], or the black level (625/50 system) in the range ±210 mV.

❽ Y/C DELAY knob and PRESET/MANUAL switch

The switch is effective only for playback of video recorded in Betacam or Betacam SP format. It makes the selection described immediately below. When it is set to MANUAL, you can use the knob to adjust the Y/C delay.

PRESET: Regardless of the position of the knob, the Y/C delay is set to the reference value.

MANUAL: You can adjust the Y/C delay in the range ±100 ns.

❾ CHROMA (chrominance) PHASE knob and PRESET/MANUAL switch

The switch makes the selection described immediately below. When it is set to MANUAL, you can use the knob to adjust the chrominance phase (the phase difference from a burst signal).

PRESET: Regardless of the position of the knob, the chrominance phase is set to the reference value.

MANUAL: You can adjust the chrominance phase in the range ±30˚.

❿ SYNC knob

This adjusts the output signal sync phase with respect to the input reference signal to this unit, in a range of ±15 µs.

Use this adjustment when the output phase of this unit is not accurately aligned with the reference signal phase, or when carrying out special effects editing with this unit and other VTRs connected to a switcher or other equipment.

1) IRE: A unit for representing a video level laid down by the IRE (Institute of Radio Engineers). The IRE is now the IEEE (Institute of Electrical and Electronic Engineers).

⓫ SC (subcarrier) knob

This adjusts the output signal subcarrier phase with respect to the input reference signal to this unit, in a range of ±200 ns.

For playback of composite signals, use this adjustment when the output phase of this unit with respect to the phase of the reference signal is not accurately aligned with the subcarrier phase. This adjustment does not affect the output SCH (subcarrier - sync) phase, which remains constant.

⓬ GOOD SHOT switch

When this switch is in the REC INHIBIT position, the GOOD SHOT REC INHIBIT indicator in the lower control panel lights, and recording shot marks on tape is no longer possible.

⓭ KEY INHIBIT switch

When this switch is in the ON position, the KEY INHIBIT indicator in the lower control panel lights, and the buttons in the upper control panel and lower control panel specified by the setting of extended menu item 118 are disabled.

⓮ CAPSTAN LOCK switch

This switch selects the capstan lock mode.

For DNW-A65

2FD: The capstan servo locks every two fields.
There may be a color framing difference between the tape playback output and the input reference signal.
During playback of a tape recorded with a composite signal as source, there may be a horizontal shift (H shift) of the image. (When extended menu item 712 is set to ON.)

4FD: The capstan servo locks every four fields.
There is no color framing difference between the tape playback output and the input reference signal.
During playback of a tape recorded with a composite signal as source, no horizontal shift (H shift) of the image occurs.
Select this position for playback of composite signals when video phase continuity at edit points is required.

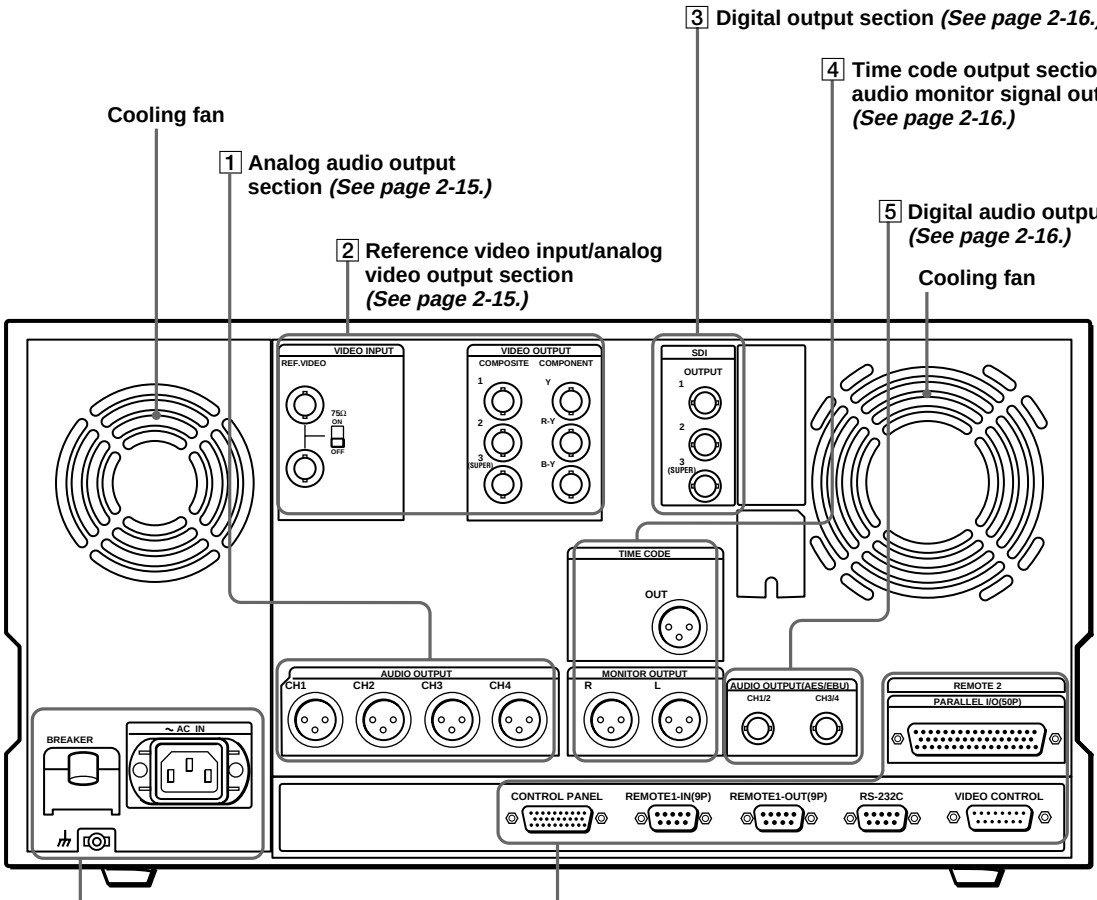
8FD (625/50): This position is not normally used in a 525/60 system.
If you select this position in a 625/50 system, the tape playback output is subject to virtual color framing, frame-locked to the input reference signal. (This unit is not subject to color frame locking to the reference signal.)

For DNW-A65P

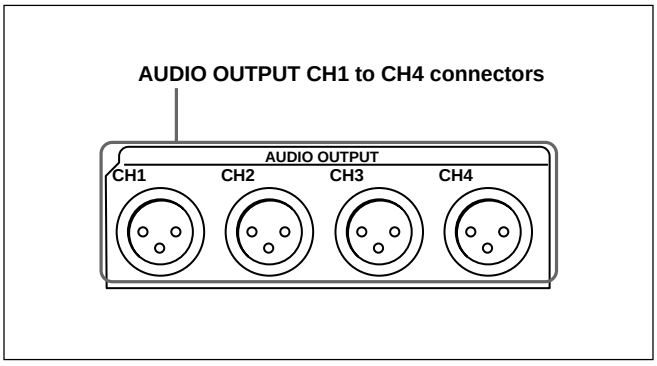
2FD/4FD: The capstan servo locks every two fields (2FD)/four fields (4FD).
There may be a color framing difference between the tape playback output and the input reference signal.
During playback of a tape recorded with a composite signal as source, there may be a horizontal shift (H shift) of the image. (When extended menu item 712 is set to ON.)

8FD: The capstan servo locks every eight fields.
There is no color framing difference between the tape playback output and the input reference signal.
During playback of a tape recorded with a composite signal as source, no horizontal shift (H shift) of the image occurs.
Select this position for playback of composite signals when video phase continuity at edit points is required.

2-2 Connector Panel

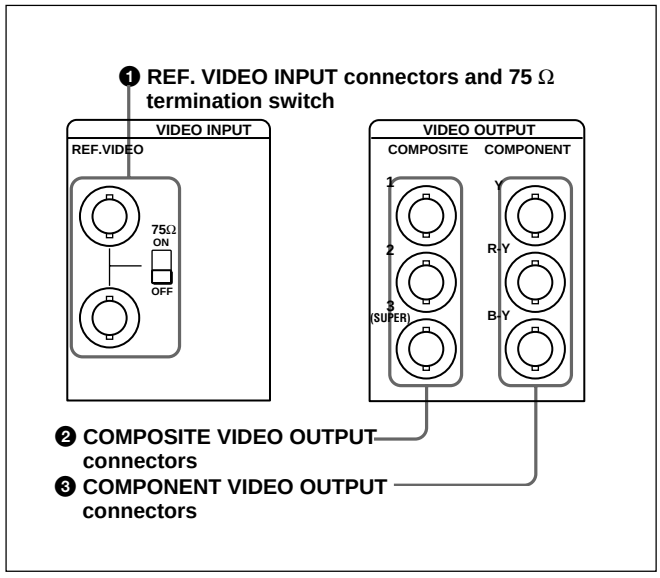


1 Analog audio output section



AUDIO OUTPUT CH1 to CH4 connectors (XLR 3-pin, male)
These output analog audio signals for channels 1 to 4.

2 Reference video input/analog video output section

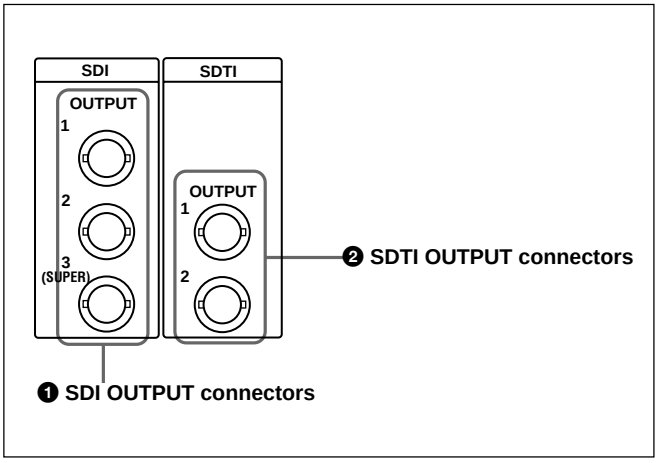


❶ REF. (reference) VIDEO INPUT connectors (BNC type) and 75 Ω termination switch
Input a reference video signal. Input a video signal with chroma burst (VBS) or a monochrome video signal (VS). When using the loop-through connection set the switch to the OFF position, and otherwise to the ON position.

❷ COMPOSITE VIDEO OUTPUT connectors (BNC type)
These output analog composite video signals.
When the CHARACTER switch on the subsidiary control panel is set to ON, connector 3 (SUPER) outputs a signal with superimposed time code, menu settings, alarm messages, and other text information.

❸ COMPONENT VIDEO OUTPUT connectors (BNC type)
These output analog component video signals (Y/R–Y/B–Y).

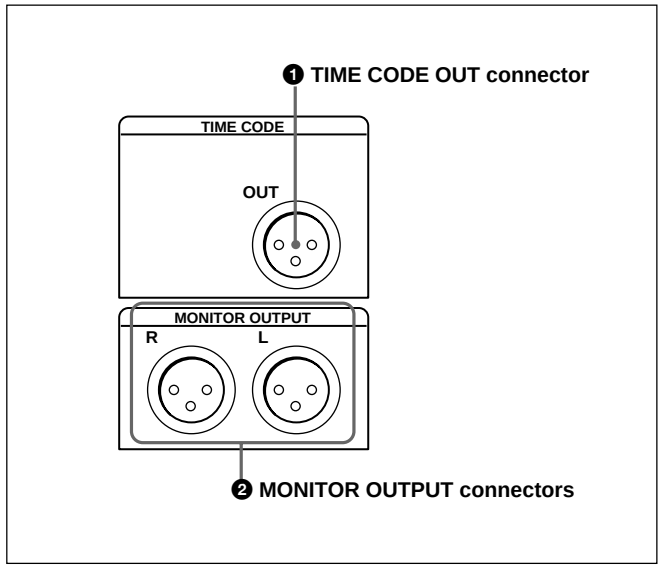
3 Digital output section



❶ SDI (Serial Digital Interface) OUTPUT connectors (BNC type)
These output D-1 format digital video/audio signals. When the CHARACTER switch on the subsidiary control panel is set to ON, connector 3 (SUPER) outputs a signal with superimposed time code, menu settings, alarm messages, and other text information.

❷ SDTI (Serial Data Transport Interface) OUTPUT connectors (BNC type) (for optional use)
These output SDTI (SX) or SDTI-CP video and audio signals.
Using these connectors requires the optional BKNW-118 SDTI (SX) Output Board or BKNW-124 SDTI-CP Output Board.

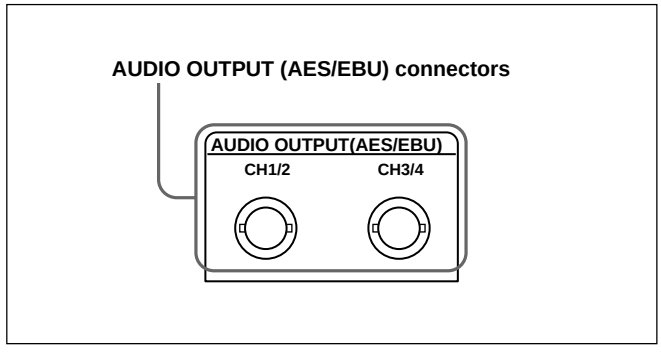
4 Time code output section and audio monitor signal output section



❶ TIME CODE OUT connector (XLR 3-pin, male)
This outputs a playback time code.
By setting extended menu item 606, you can also output the time code from the internal time code generator locked to the playback time code.

❷ MONITOR OUTPUT connectors (XLR 3-pin, male)
According to the setting of the audio signal selection buttons *(see page 2-2)* on the upper control panel, two (L and R) audio monitor signals are output.

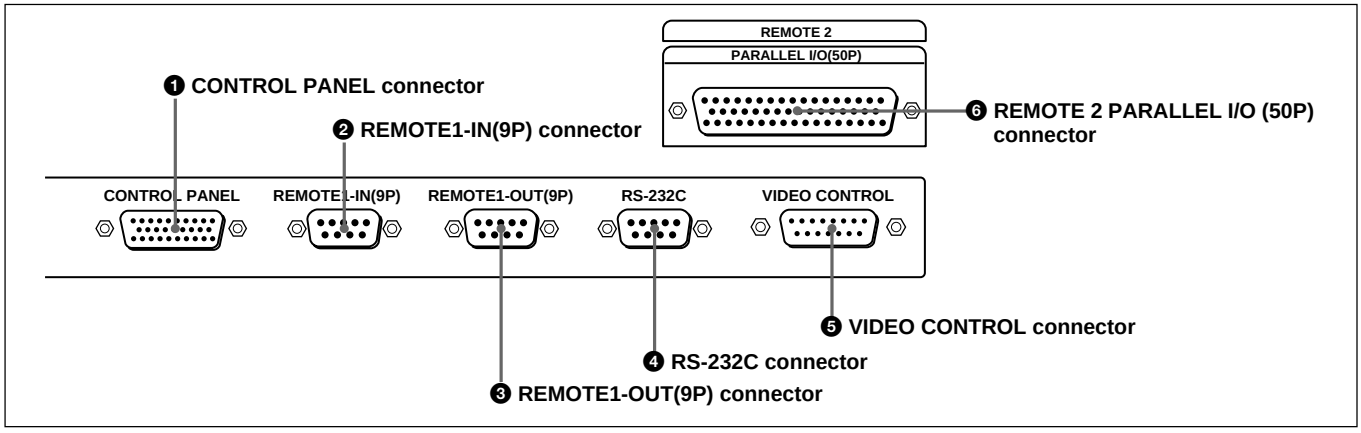
5 Digital audio output section



AUDIO OUTPUT (AES/EBU) connectors (BNC type)
Output up to two sets (4 channels: channels 1/2 and 3/4) of AES/EBU format digital audio signals.

http://getMANUAL.com

6 External device connectors



❶ CONTROL PANEL connector (29-pin)
After disconnecting the control panel from this unit, use this connector to connect the 29-way remote control cable supplied with the control panel extension kit.

❷ REMOTE1-IN(9P) connector (D-sub 9-pin)
When using this unit together with a DNW-A75/A75P or a D-1, D-2, or Betacam VTR, and a BVE-series BVE-900/910/2000/9000/9000P/9100/9100P or other editor, connect the supplied 9-pin remote control cable from the other unit to this connector. The IN(9P) and OUT(9P) connectors provide a loop-through connection for remote control signals.

❸ REMOTE1-OUT(9P) connector (D-sub 9-pin)
This provides the loop-through output for remote control signals from the REMOTE1-IN(9P) connector ❷.

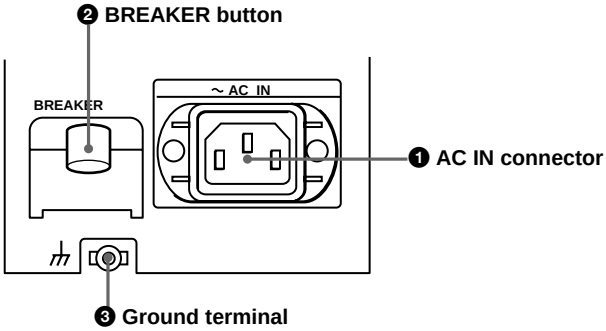
❹ RS-232C connector (D-sub 9-pin)
Use this for monitoring and diagnosis of the state of this unit from an external computer, using ISR (Interactive Status Reporting).

❺ VIDEO CONTROL connector (D-sub 15-pin)
For remote control of the internal digital video processor, connect an optional BVR-50/50P Remote Control Unit or similar.
Always power off this unit before connecting the remote control unit.

❻ REMOTE 2 PARALLEL I/O (50P) connector (D-sub 50-pin)
Connect remote control signals from an external device.

For details, refer to the Installation Manual.

7 Power supply section



❶ AC IN connector
Use the optional power cord to connect this to an AC outlet.

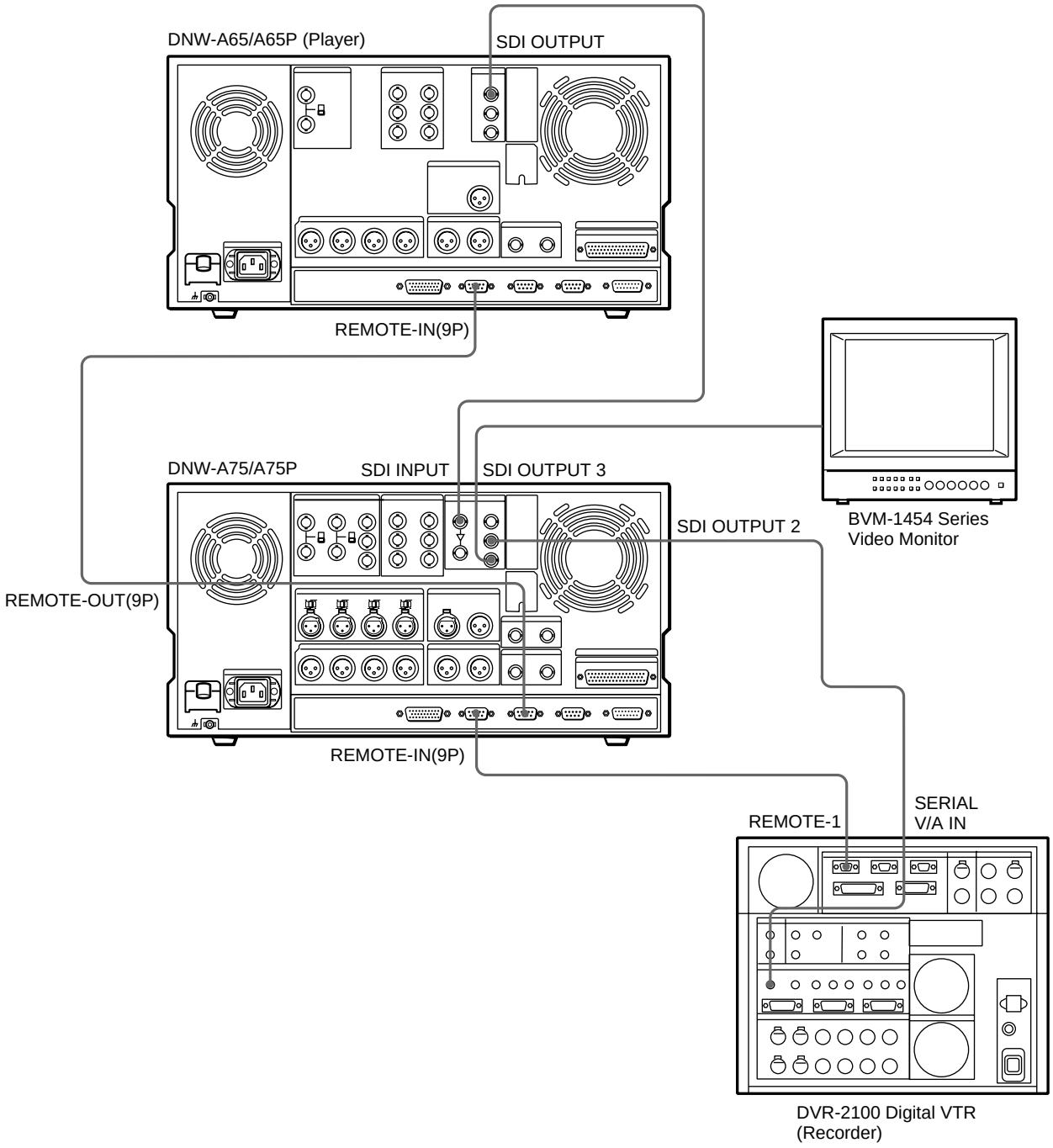
❷ BREAKER button
This jumps out if an excess current flows on the primary side of the AC power circuit.

❸ Ground terminal
Connect this to ground.

3-1 Connections to External Devices

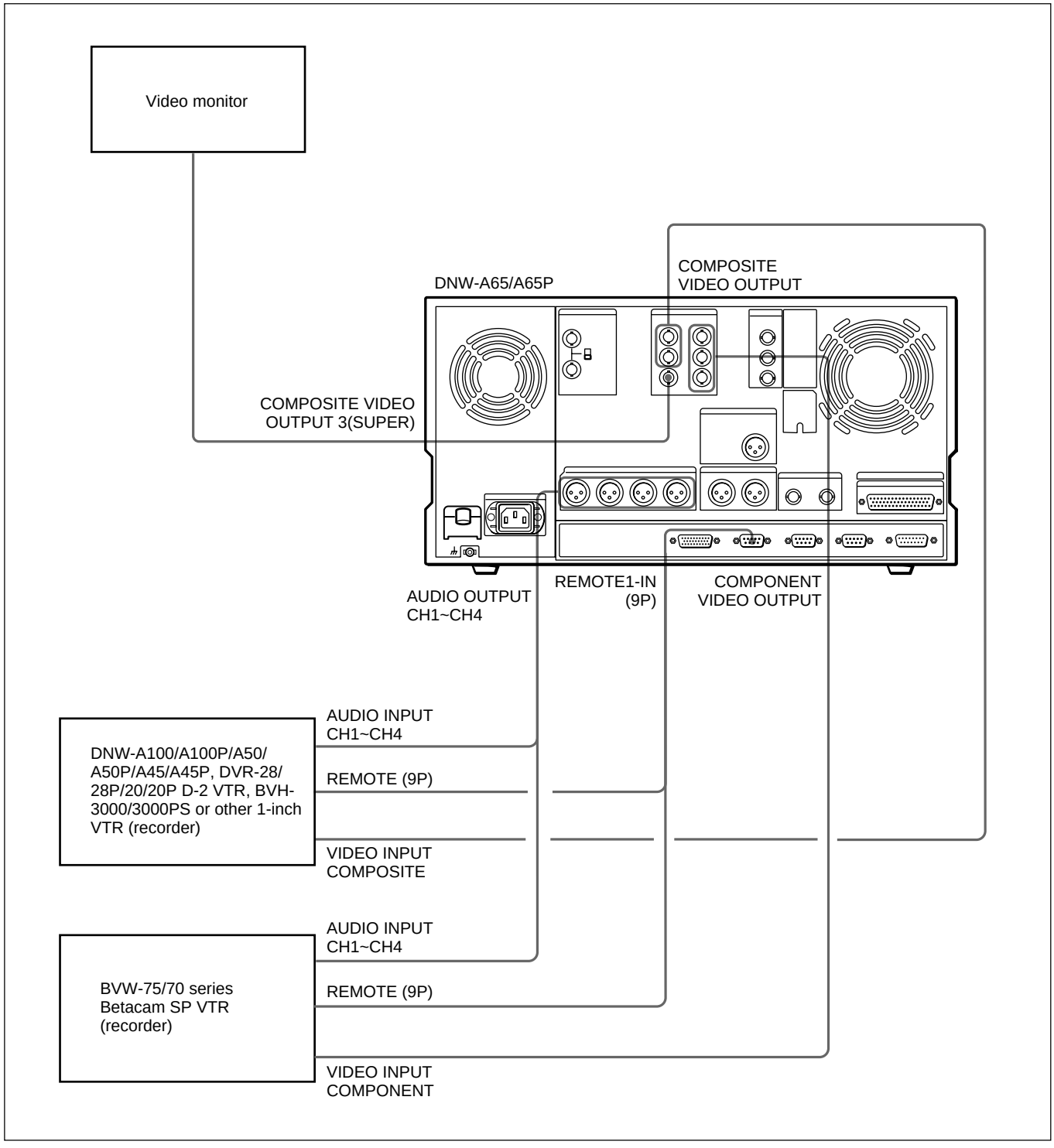
3-1-1 Connections for Digital Output Signals

The illustration below shows an example connection diagram for an editing system using digital output signals from this unit as source signals, a DVR-2100 D-1 component digital VTR as recorder, and a DNW-A75/A75P as editing controller.



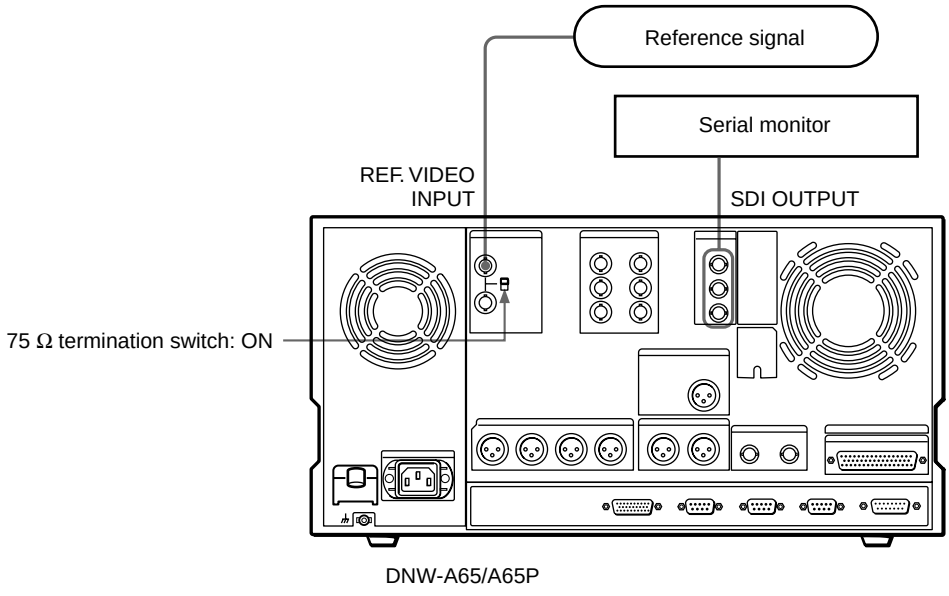
3-1-2 Connections for Analog Output Signals

The following example shows the connections with a Betacam SP VTR, 1-inch VTR, D-2 VTR, and so forth for recording analog audio and video signals output from this unit.



3-1-3 Connecting a Reference Signal

Connect a reference signal as shown below.



Reference signal for video output and servo system

The output from the internal reference video signal generator is supplied to the output video signal and servo circuits as a reference signal.

When an external reference signal is input

The internal video reference signal generator operates in synchronization with the input reference signal.

3-2 Setup

The principal setup operations before operating this unit can be carried out using setup menus.
The setup menus of this unit comprise a basic menu and an extended menu. The contents of these menus are as follows.

Basic menu:

- Items relating to the hours meter
- Items relating to operation
- Items relating to menu banks

Extended menu:

- Items relating to the control panels
- Items relating to the remote control interface
- Items relating to DMC playback operations
- Items relating to preroll
- Items relating to tape protection
- Items relating to the time code generator
- Items relating to video control
- Items relating to audio control
- Items relating to digital processing

For detailed information about the items, except for the basic menu items relating to the hours meter, of these menus and how to use them, see Chapter 6, "Menu System".
For details of the basic menu items relating to the hours meter, see Section 7-4, "Digital Hours Meter" (page 7-3).

This unit allows four different sets of menu settings to be saved in what are termed "menu banks" numbered 1 to 4. Saved sets of menu settings can be recalled for use as required.

For more information about the menu banks, see the section "Menu bank operations (menu items B01 to B14)" (page 6-8) .

3-3 Superimposed Character Information

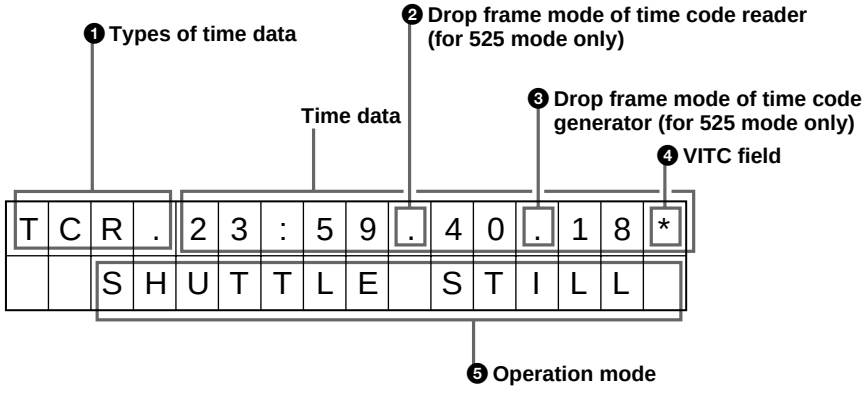
When the CHARACTER switch on the subsidiary control panel is set to ON, the video signal output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector or the SDI OUTPUT 3 (SUPER) connector contains superimposed character information, including time code, menu settings, and alarm messages.

Adjusting the character display

You can adjust the position, size and type of the superimposed characters using the basic menu.

For details of the basic menu, see Section 6-2-1, "Items in the Basic Menu" (page 6-1).

Information displayed


❶ Types of time data
❷ Drop frame mode of time code reader (for 525 mode only)
Time data
❸ Drop frame mode of time code generator (for 525 mode only)
❹ VITC field
TCR. 23:59.40.18*
SHUTTLE STILL
❺ Operation mode

Note

The display shown above corresponds to the factory default settings of the unit.
Changing the setting of basic menu item 005 allows different time data to be displayed in the bottom line of the display.

For details of the basic menu, see Section 6-2-1, "Items in the Basic Menu" (page 6-1).

❶ Types of time data

Display	Meaning
CTL	CTL counter data
TCR	LTC reader time code
UBR	LTC reader user's bits
TCR.	VITC reader time code
UBR.	VITC reader user's bits
IN	STUNT IN point
OUT	STUNT OUT point
AI	PLAY IN point
AO	PLAY OUT point
DUR	Duration between any two of the four DMC playback control points (STUNT IN, STUNT OUT, PLAY IN, PLAY OUT)

Note

If the time data or user's bits cannot be read correctly, they will be displayed with an asterisk. For example, "T*R", "U*R", "T*R." or "U*R.".

❷ Drop frame mode for time code reader (for 525 mode only)

“.”: Drop frame mode
“:”: Non-drop-frame mode

❸ Drop frame mode for time code generator (for 525 mode only)

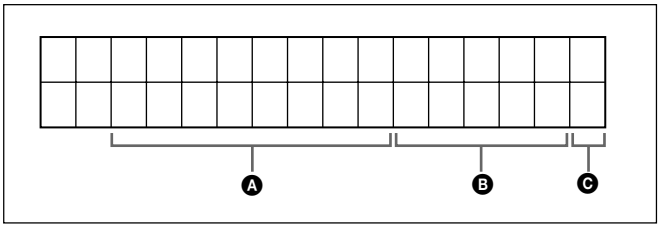
“.”: Drop frame mode (factory preset)
“:”: Non-drop-frame mode

❹ VITC field

“ ” (blank): Fields 1 and 3
“ * ”: Fields 2 and 4

❺ Operation mode

The field is divided into three blocks, A, B and C.
- Block A displays the operation mode.
- Block B displays the servo lock status or tape speed.
- Block C displays a ■ mark to indicate a DMC playback section.



Display		Operation mode
Block A	**Block B**	
UNTHREAD		Cassette is not loaded.
STANDBY OFF		Standby off mode
T.RELEASE		Tape tension released
STOP		Stop mode
F.FWD		Fast forward mode
REW		Rewind mode
PREROLL		Preroll mode
PLAY		Playback mode (servo unlocked)
PLAY	LOCK	Playback mode (servo locked)
PLAY	Deviation from normal speed (%)	Capstan override mode
JOG	STILL	A still picture in jog mode
JOG	FWD	Jog mode in forward direction
JOG	REV	Jog mode in reverse direction
SHUTTLE	(Speed)	Shuttle mode
VAR	(Speed)	Variable mode
DMC	(Speed)[a)]	DMC playback speed
DMC-SPD	(Speed)	DMC initial speed setting
PLY-SPD	Variation (%) from normal speed	Capstan-override mode

a) Initial speed settings or stored speed settings

3-4 Cassettes

3-4-1 Cassette Types

This unit uses a 1/2-inch tape width for both recording and playback. You can use Betacam SX cassettes, Betacam SP cassettes (metal tape), or UVW cassettes (metal tape).

Betacam SX cassettes

Small cassettes	BCT-12SXA/22SXA/32SXA/60SXA
Large cassettes	BCT-64SXLA/94SXLA/124SXLA/184SXLA

Betacam SP cassettes (metal tape)

Small cassettes	BCT-5MA/10MA/20MA/30MA
Large cassettes	BCT-5MLA/10MLA/20MLA/30MLA/60MLA/90MLA

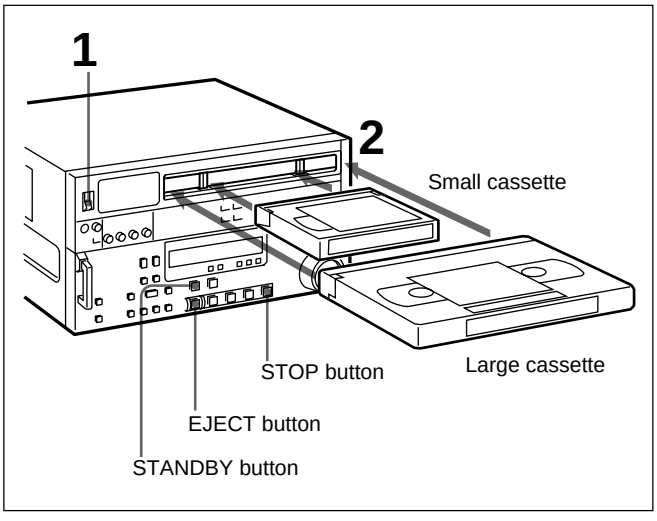
UVW cassettes (metal tape)

Small cassettes	UVWT-10MA/20MA/30MA
Large cassettes	UVWT-60MLA/90MLA

3-4-2 Inserting and Ejecting Cassettes

It is not possible to insert or eject a cassette unless the unit is powered on.

Inserting a cassette



1 Turn the POWER switch on.

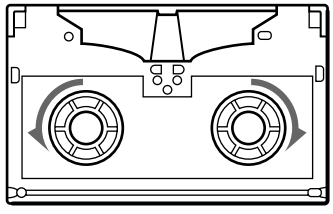
2 Check the following points, before inserting the cassette in the orientation shown in the figure.
- Check that message “ERROR-10” is not shown in the time data display area 1.
- Check that there is no slack in the tape.

The cassette is drawn into the unit, and the STANDBY and STOP buttons light.

If message “ERROR-10” appears in the time data display area 1 , there is moisture condensation in the unit. For steps to take when “ERROR-10” is displayed, see Section 7-3, “Moisture Condensation” (page 7-2).

Removing slack from the tape

Press in one of the reels with a finger, and turn gently in the direction shown by the arrows until there is no slack in the tape.



Ejecting a cassette

Press the EJECT button.

If the tape slacks inside the unit, pressing the EJECT button may not eject the cassette. For information about how to remove the cassette in such a case, refer to the Maintenance Manual.

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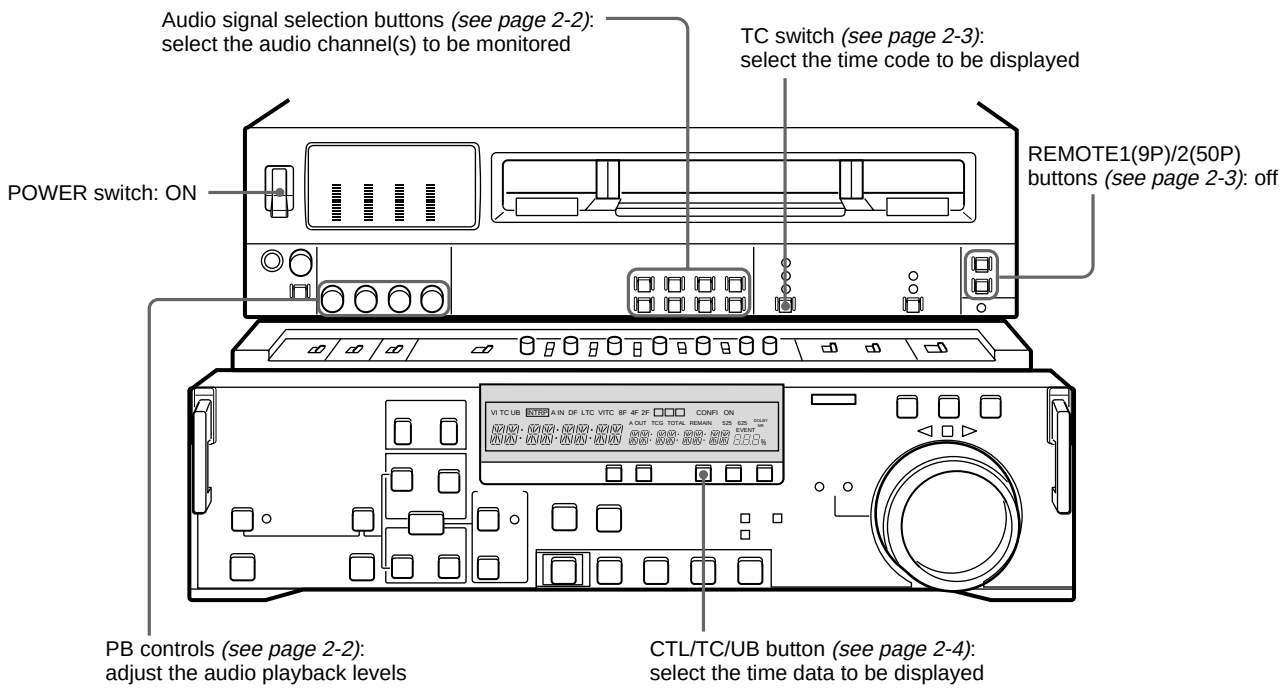
4-1 Preparations for Playback

4-1-1 Switch Settings

Before beginning playback, make any necessary switch settings.

For details of the settings of each of the switches, refer to the pages indicated in parenthesis.


Audio signal selection buttons (see page 2-2): select the audio channel(s) to be monitored
TC switch (see page 2-3): select the time code to be displayed
REMOTE1(9P)/2(50P) buttons (see page 2-3): off
POWER switch: ON
PB controls (see page 2-2): adjust the audio playback levels
CTL/TC/UB button (see page 2-4): select the time data to be displayed

4-1-2 Time Data Selection

Displayed time data

Use the CTL/TC/UB button to select one of CTL (control), time code, and user bit values. When you select time code, the data displayed is determined by the setting (LTC/AUTO/VITC) of the TC switch as follows.

TC switch setting	Displayed data
LTC	LTC recorded on tape
VITC	VITC recorded on tape
AUTO	LTC or VITC (automatically switched)

Output time code

The setting of the extended menu item 606 determines whether the time code output from the TIME CODE OUT connector is the time code read by the internal time code reader (REGEN), or the playback time code (TIME).

For details of the extended menu item 606, see page 6-14.

4-2 Playback/Feed Play Procedures

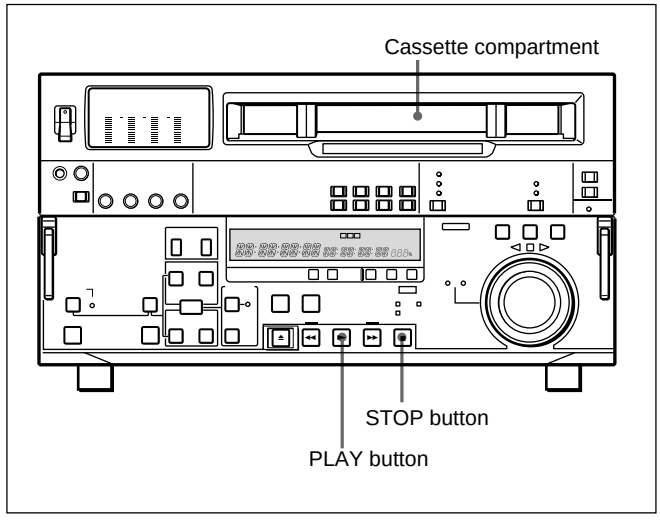
This section describes the following types of playback which the unit can carry out:

- Normal playback
  Playback at normal (×1) speed
- Playback in jog mode
  Variable speed playback, with the speed determined by the speed of turning the search dial
- Playback in shuttle mode
  Variable speed playback, with the speed determined by the angular position of the search dial
- Playback in variable mode
  Variable speed playback, with the speed finely determined by the angular position of the search dial
- Playback using the capstan override function
  The playback speed is adjusted temporarily according to the angular position of the search dial, to align the playback phase with that of another player or a VTR.
- Playback in feed mode
  Playback at any speed selected in the range of 0.1 to 2 times normal speed. High-speed data transfer through the SDTI OUTPUT connectors is possible.
- DMC Playback

4-2-1 Normal Playback

First insert a cassette.

For details of how to insert a cassette, see Section 3-4-2, "Inserting and Ejecting Cassettes" (page 3-7).



To start playback

Press the PLAY button.
Playback starts, the servo locks, and the SERVO indicator lights.

To stop playback

Press the STOP button.

If you play back to the end of the tape

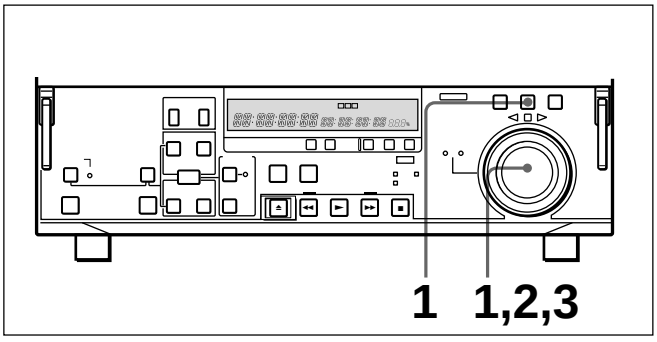
The tape is automatically rewound, and stops.

When using the Dolby noise reduction system

When using an analog Betacam cassette, you can use Dolby C noise reduction for audio playback.
To activate the Dolby noise reduction system, set the DOLBY NR switch on the subsidiary control panel to ON.

4-2-2 Playback in Jog Mode

In jog mode, you can control the speed of playback by the speed of turning the search dial. The playback speed range is ±1 times normal speed.
To carry out playback in jog mode, use the following procedure.



1 Press the JOG button or search dial so that the JOG button is lit.

Pressing the search dial toggles between jog mode and shuttle mode.

2 Turn the search dial in the desired direction, at the speed corresponding to the desired playback speed.

Playback in jog mode starts.

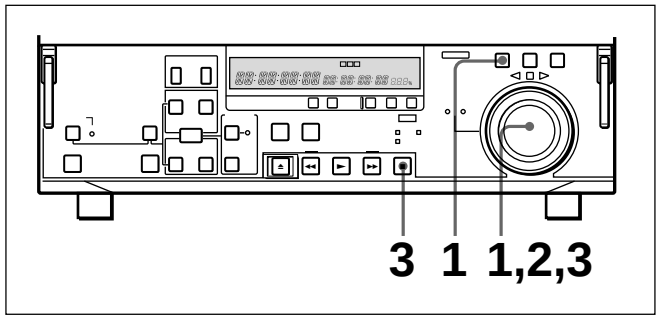
3 To stop playback in jog mode, stop turning the search dial.

The function to toggle between jog mode and shuttle mode each time the search dial is pressed can be disabled by changing the setting of extended menu item 101.

4-2-3 Playback in Shuttle Mode

In shuttle mode, you can control the speed of playback by the angular position of the search dial. The range of playback speed is as follows:
- Using a Betacam SX tape: ±78 times
- Using an analog Betacam tape: ±35 times (DNW-A65) or ±42 times (DNW-A65P)

There are detents on the search dial at the still position and at ±5 times normal speed.
To carry out playback in shuttle mode, use the following procedure.



1 Press the SHUTTLE button or search dial so that the SHUTTLE button is lit.

Pressing the search dial toggles between jog mode and shuttle mode.

2 Turn the search dial to the desired angle corresponding to the desired playback speed.

Playback in shuttle mode starts.

3 To stop playback in shuttle mode, return the search dial to the center position, or press the STOP button.

The function to toggle between jog mode and shuttle mode each time the search dial is pressed can be disabled by changing the setting of extended menu item 101.

To return to normal-speed playback

Press the PLAY button.

To alternate between normal-speed playback and shuttle mode playback

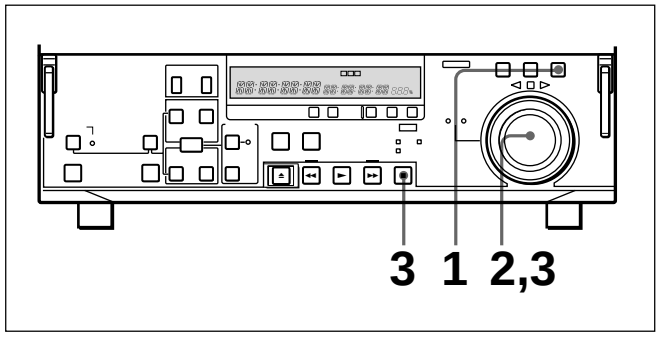
Set the search dial to the position corresponding to the desired shuttle playback speed, then switch between normal-speed playback and shuttle playback by pressing the PLAY and SHUTTLE buttons alternately.
For intermittent shuttle mode playback, press the STOP and SHUTTLE buttons alternately.

To alternate between normal-speed playback and variable mode playback

Set the search dial to the position corresponding to the desired variable playback speed, then switch between normal-speed playback and variable playback by pressing the PLAY and VAR buttons alternately.
For intermittent variable mode playback, press the STOP and VAR buttons alternately.

4-2-4 Playback in Variable Mode

In variable mode, you can finely control (51 steps) the speed of playback in the range of –1 to +2 times (for analog signals, –1 to +3 times) normal speed.
There are detents on the search dial at the still position and at ±1 times normal speed.
To carry out playback in variable mode, use the following procedure.



1 Press the VAR button, turning it on.

2 Turn the search dial to the desired angle corresponding to the desired playback speed.

Playback in variable mode starts.

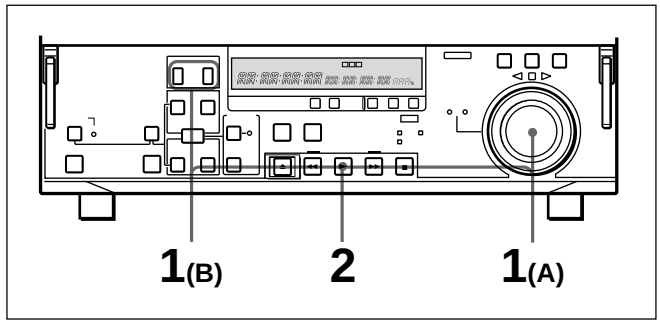
3 To stop playback in variable mode, return the search dial to the center position, or press the STOP button.

To return to normal-speed playback

Press the PLAY button.

4-2-5 Playback Using the Capstan Override Function

You can use the capstan override function to adjust the playback speed temporarily. This function is convenient for playback phase synchronization with another player or a VTR playing back the same program.



1 (A) Hold down the PLAY button, and turn the search dial in the desired direction to adjust the playback speed.
The range of speed adjustment is ± 15% in steps of 1%.

(B) Hold down the PLAY button, and press the TRIM buttons to adjust the playback speed.
The playback speed can be adjusted to ± 8% only.

The SERVO indicator goes off.

2 When the adjustment is completed, release the PLAY button.

The tape transport returns to normal speed, and the SERVO indicator comes on again.

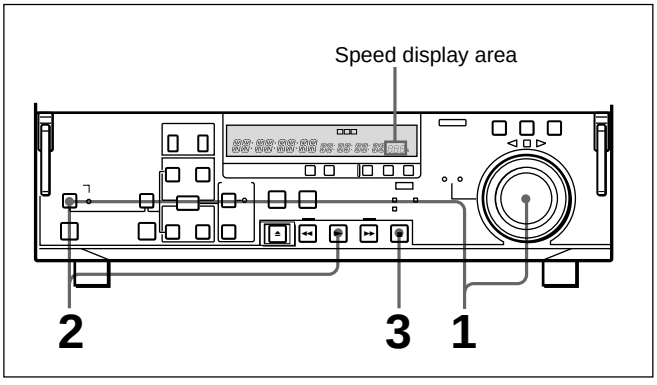
4-2-6 Carrying Out Playback in Feed Mode

When using a Betacam SX tape, you can use feed mode to play back at any speed from 0.1 to 2 times normal. You can select the playback speed in steps of 0.1 times normal speed. The playback output is output from the (optional) SDTI OUTPUT connectors. This therefore allows high-speed dubbing to another device equipped with an SDTI input connector.

Note

Playback in feed mode requires a setting of extended menu item 111.

Use the following procedure to carry out feed mode playback.



1 Hold down the DMC MODE button, and turn the search dial to set the playback speed.

While you hold down the DMC MODE button, the playback speed setting for feed mode (initially the maximum setting) appears in the speed display area as a multiple of normal speed. (For example, twice normal speed is shown as “2.00”.)

2 Hold down the DMC MODE button, and press the PLAY button.

Both buttons light, and playback in feed mode starts.

3 Where you wish to stop playback, press the STOP button.

Playback stops.

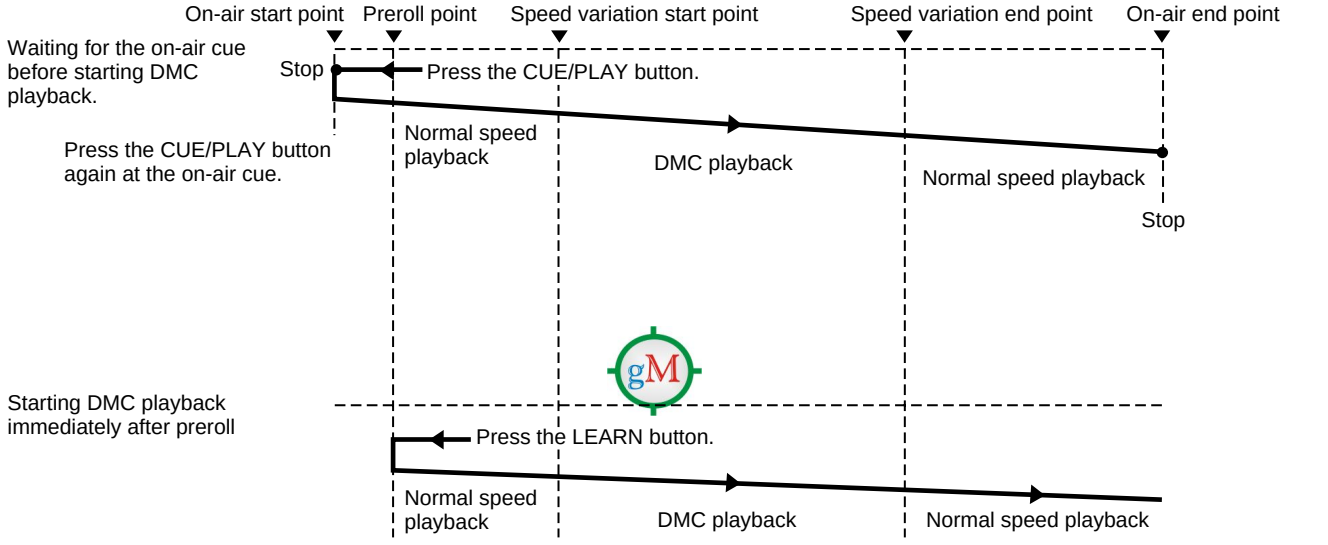
4-3 Dynamic Motion Control (DMC) Playback

4-3-1 Overview

DMC playback allows you to vary the playback speed for a certain section of a tape, in variable mode (from –1 to +2 times normal speed), and store the varying speed in memory for later playback at the same varying speed.

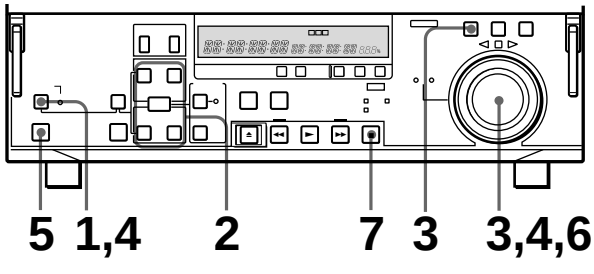
For example, during a live broadcast of a sporting event you can set the start and end points of highlights, and then provide immediate DMC playback of those highlights.

During DMC playback the tape moves as shown in the following figure.



4-3-2 Storing a varying playback speed in memory

To store the playback speed for DMC playback, use the following procedure.



1 Press the DMC MODE button, turning it on.

2 While playing back the recorded tape, press the ENTRY button and each of the following buttons simultaneously, to set the start and end points.
- On-air start point: PLAY IN button
- Speed variation start point: STUNT IN button
- Speed variation end point: STUNT OUT button
- On-air end point: PLAY OUT button

Each press turns the corresponding button on.

3 Press the search dial or the SHUTTLE button or VAR button to enter shuttle/variable mode.

The SHUTTLE/VAR indicator lights.

4 Holding down the DMC MODE button, turn the search dial, to set the initial speed at the playback start point.

The speed you set appears in the time counter. During this period the tape does not move. When the initial speed setting is complete, release the DMC MODE button.

5 Press the LEARN button.

The tape is prerolled and played back at normal speed from the on-air start point to the speed variation start point. On passing the speed variation start point, the MEMORY indicator begins to flash, and playback begins at the speed set in step **4**.

6 Turn the search dial to vary the playback speed.

While the MEMORY indicator is flashing, the speed variations are stored in memory. On passing the speed variation end point, the MEMORY indicator changes from flashing to continuously lit, and the variable speed storing ends.

7 Press the STOP button to stop the tape.

If the MEMORY indicator lights continuously before the speed variation end point

This indicates that the memory became full at that point. It is therefore not possible to record more speed variation. The maximum capacity is a duration of 120 seconds.

To amend the stored speed variation

Press the LEARN button.
The interval between the speed variation start and end points is automatically played back at the stored speed. Operate the search dial as required, to adjust the playback speed.

Setting the initial speed to normal speed

In step **4**, press the PLAY button.

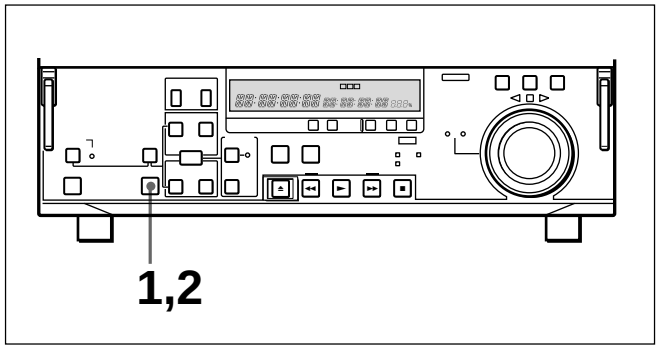
4-3-3 Executing DMC Playback

There are two methods of starting DMC playback.

- Starting playback at the on-air cue from the on-air start point
- Starting playback immediately after preroll

Note

To avoid operating mistakes we recommend that you use the unit in standalone mode when carrying out DMC playback.



To start playback at the on-air cue from the on-air start point

Use the following procedure.

1 Press the CUE/PLAY button.

The CUE/PLAY button lights, and the tape is cued up to the on-air start point. After the tape is cued up, the CUE/PLAY button flashes.

2 At the moment the on-air cue is given, press the CUE/PLAY button once more.

The CUE/PLAY button lights, and playback starts at standard speed.
Between the speed variation start and end points, DMC playback is carried out at the stored speed, and then playback continues at normal speed and the tape stops at the on-air end point.

Starting playback immediately after preroll

Press the LEARN button.
The LEARN button lights, and after preroll, DMC playback is carried out for the section from the speed variation start point, then playback continues at normal speed from the speed variation end point.

Stopping the tape during DMC playback

Press the STOP button.

To exit DMC playback mode

Press the DMC MODE button and the DELETE button simultaneously.

5-1 Overview

This unit can use shot marks recorded with Betacam SX camcorders and Betacam SX VTRs such as the DNW-A75/75P. Shot marks are indications at desired points on a tape which enable faster cueing.

Types of shot mark

This unit supports the following three types of shot marks. This chapter describes recording start marks and post marks, treating them as varieties of shot marks.

Shot mark type	Writing on a camcorder etc.	Writing on this unit	Modifying and deleting on this unit
Recording start mark	Automatically written at the start of recording.	Not written.	Only deleting is possible.
Shot mark 1 and shot mark 2	Written by a manual shot mark operation during recording or editing.	Not written.	
Post mark	Not written (Written only by this unit)	Written by a button operation during playback, while stopped, or during a search.	Possible.

First, the shot mark functions of this unit are described in simple terms.

Reading shot marks

This unit reads in shot marks written on a Betacam SX camcorder or similar equipment and stores them in memory. (To a maximum of 200)
Once this data is stored in this unit, it is preserved even when the power is turned off.

Writing and erasing shot marks

This unit can erase any type of shot mark, but it can only write post marks .

Shot mark list operations

On the monitor, you can display a list of the shot marks read in by this unit, select required shot marks, delete shot marks, and so on. You can also add a memo mark (#) to a shot mark in the list.
During tape playback, you can add a list of virtual shot marks. This is not written on the tape itself.

Cueing up to shot marks

By selecting a desired shot mark from the shot mark list, you can cue up immediately to that position. By means of a button operation, you can also cue up to the shot marks adjacent to the current tape position. (Index function)

Shot data display

When the tape includes shot data (camera, time, and other information captured at the time of shooting), you can read this in, and display the details on a monitor. It is also possible to display the shot mark list and shot data simultaneously.

Sorting shot marks by cassette

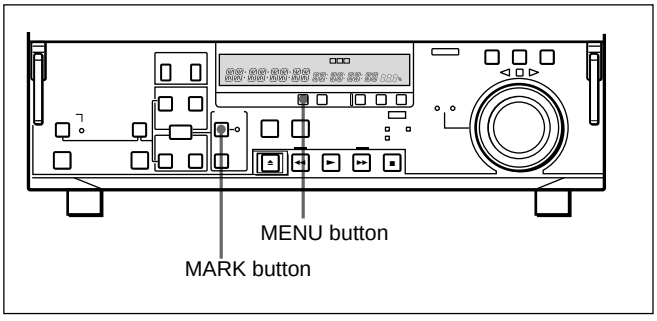
When the tape includes shot data, this unit recognizes which cassette each shot mark comes from. You can therefore sort the read-in shot marks by cassette, to obtain a list in timecode order.

5-2 Shot Mark Operation Menu

This section describes the settings in the shot mark operation menu.

Displaying the shot mark operation menu

Hold down the MARK button, and press the MENU button.



The following menu appears on the monitor.

```
SHOT MARKER
 G01:SEARCH TYPE -   all
 G02:LISTING TYPE
```

Details of the shot mark operation menu

The shot mark operation menu comprises two items, G01 and G02. The detailed contents appear in the following table.

Item number	Item name	Settings
G01	SEARCH TYPE	Select which shot mark types the index function searches for, from the following possibilities: **all** **rec start mark** **shot mark 1** **shot mark 2** **post mark**
G02	LISTING TYPE	For each type of shot mark, select whether to read into the list (ON) or not (OFF): **rec start mark** **shot mark 1** **shot mark 2** **post mark**

Changing the menu settings

The basic procedure for accessing menu items and changing settings is the same as for the setup menus. Note, however, the following operations for item G02.

For details of setup menu operations, see Section 6-2-2, "Basic Menu Operations" (page 6-4).

To change the setting of item G02

Use the following procedure.

1 Press the STOP button to select the required item.

2 Hold down the JOG button and turn the search dial to toggle the value to ON or OFF.

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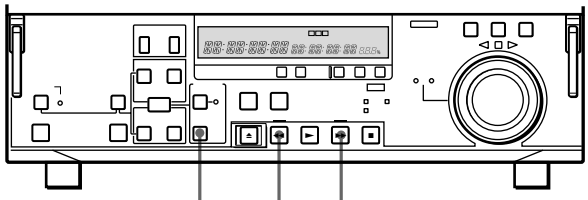
5-3 Shot Mark Operations

This section describes the operations concerning reading and writing shot marks. Note that the following operations cannot be carried out by remote control.

5-3-1 Reading Shot Marks

To read in shot marks

With a cassette loaded, hold down the LIST button and press the F FWD or REW button.



While the shot marks are being read in, the F FWD or REW button flashes.
The unit searches to the end of the tape, then rewinds automatically.

For the procedure for list the shot marks read in, see page 5-4.

Note

When 200 shot marks have been read in, the control panel display shows the message “SHOT LIST FULL”, and the reading stops.
To cancel the message, press one of the tape transport buttons.

To stop reading

Press the STOP button.

Reading shot marks from more than one cassette

After changing the cassettes, carry out the reading operation again.
Data written in the new cassette will be added as long as the total does not exceed 200 shot marks. For example, if 190 shot marks have already read in, only 10 shot marks will be read from the new tape.
In the shot mark list *(see page 5-4)* the data from different cassettes is separated by a row of dashes.

5-3-2 Writing Post Marks

When this unit is in any of the playback, stopped, or search modes, you can write a post mark only.

1 Hold the MARK button down for at least 2 seconds.

The REC/ERASE indicator lights green.

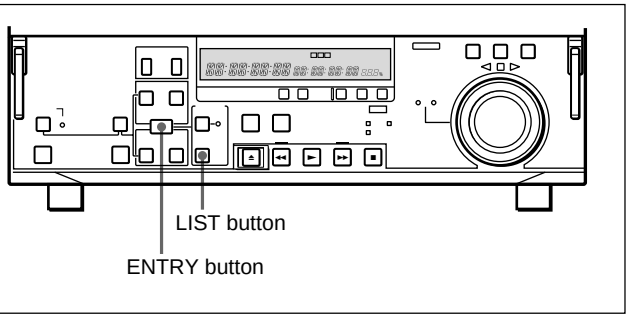
2 At the position you wish to write the mark, hold down the ENTRY button and press the MARK button.

While the mark is being written, the message “RECORD SHOT MARK” appears on the monitor, and the REC/ERASE indicator lights red.

5-3-3 Shot Mark List Operations

Displaying the shot mark list

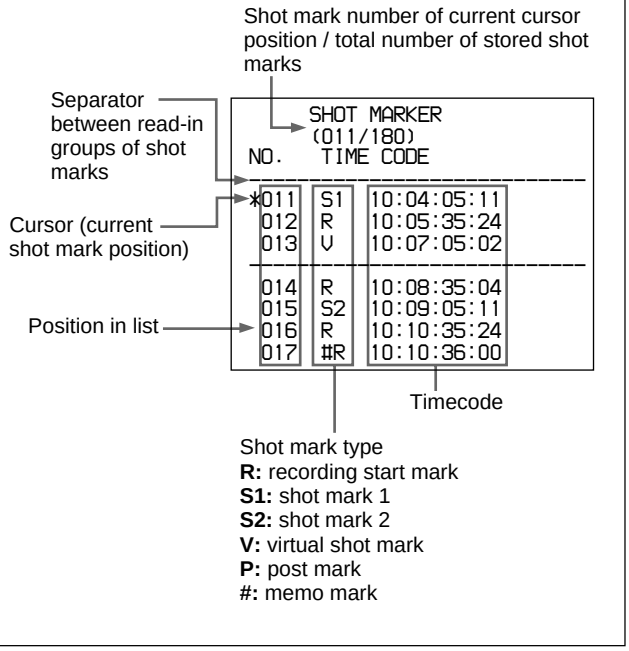
Hold down the ENTRY button and press the LIST button.



All of the shot mark types for which item G02 in the shot mark operation menu is set to “ON” appear in the list. If you do the same operation again, the list display disappears.

Example of list display

The following figure shows how the list is organized.

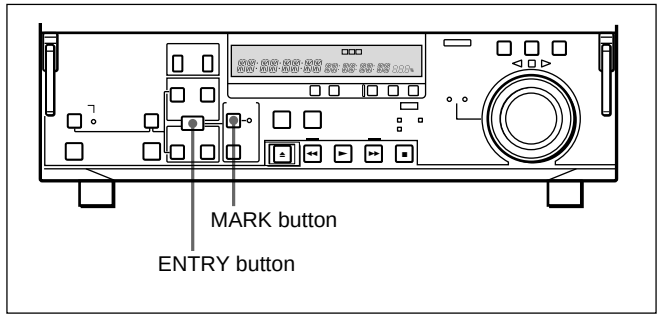


Selecting a shot mark

Turn the search dial to align the asterisk cursor with the desired shot mark.

Entering virtual shot marks

During playback or search, hold down the ENTRY button, and press the MARK button.



A virtual shot mark appears on the monitor as “V-MARK xxx” (xxx is the number). This is not written to the tape.
After entering a virtual shot mark, if you change the cassette or power the unit off, it appears in the list as the first shot mark of the next group read in.

Adding a memo mark (#)

Select the shot mark to which you wish to add the memo mark, then press the SET button.
Repeat this operation to remove a memo mark.

Selecting the types of shot mark to be shown in the list

For each of the types of shot mark (recording start mark, shot mark 1, shot mark 2, and post mark) you can specify whether it is read in.
In item G02 of the shot mark operation menu, set the required types to “ON”.

For details of the menu, see page 5-2.

You can also use the following procedure.

1 With the shot mark list displayed, hold down the STOP button, and press the SET button.

You can now select the shot mark types.

2 Turn the search dial to select a shot mark type.

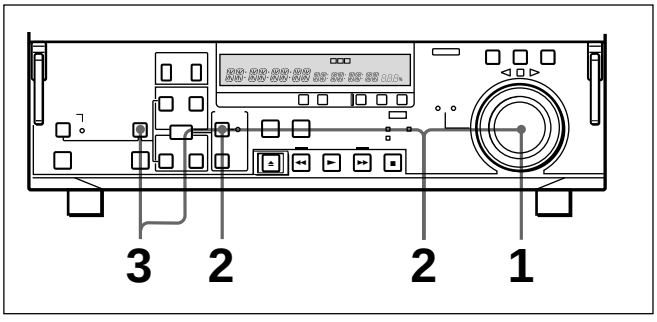
3 Hold down the JOG button and turn the search dial to switch between ON (displayed) and OFF (not displayed).

4 To return to the shot mark list, hold down the STOP button, and press the SET button.

Deleting a shot mark from the list

To delete an individual shot mark

Use the following procedure.



1 In the shot mark list, select the shot mark to be deleted.

2 Hold the MARK button down.

While you hold down the button, an “X” appears after the selected shot mark number, indicating that it will be deleted.
To delete more than one shot mark, while holding down the MARK button turn the search dial to select all of the shot marks.

3 With the MARK button held down, press the DELETE button.

This deletes the shot marks which were marked by an “X”.

To delete the entire list

Hold down the DELETE button and press the LIST button.
This deletes all shot marks from the list. This does not erase marks from the tape.

Erasing shot marks from the tape

To erase a shot mark, use the following procedure.

Note

Once you erase a shot mark from the tape, it cannot be read back in.

1 With no shot mark list displayed, hold the MARK button down for at least 2 seconds.

The REC/ERASE indicator lights green, indicating that you can rewrite or erase shot marks.

2 Display the shot mark list.

3 Turn the search dial to select on the list the shot mark you wish to erase.

4 Press the DELETE button and MARK button simultaneously.

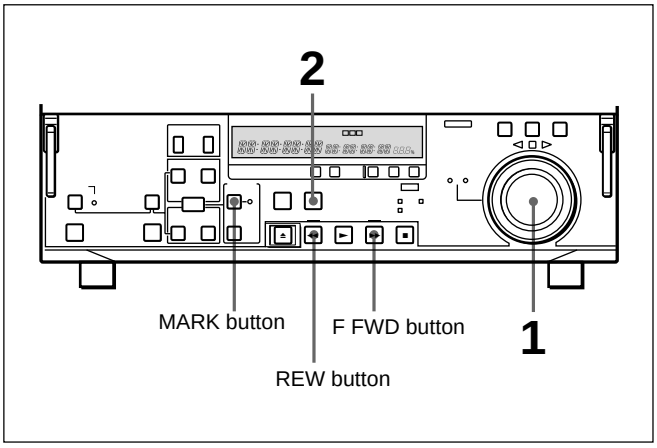
During the erasure process the message “ERASE SHOT MARK” appears, and the REC/ERASE indicator lights red.

5 When the erasing operation is completed, hold down the MARK button for at least 2 seconds, to turn off the REC/ERASE indicator.

5-3-4 Cueing Up to Shot Marks

Cueing up to a selected shot mark

Cueing up to a selected shot mark
Use the following procedure.



1 Select the desired shot mark from the shot mark list.

2 Press the PREROLL button.

Cueing up to shot marks adjacent to the current tape position (index function)

To select the shot marks to which the index function applies

In item G01 of the shot mark operation menu *(page 5-2)*, select one of recording start mark, shot mark 1, shot mark 2, and post mark, or select all.

To cue up to the shot mark before or after the current tape position

Holding down the MARK button, press the F FWD button or REW button.
While the tape is moving the F FWD button or REW button flashes.

Note

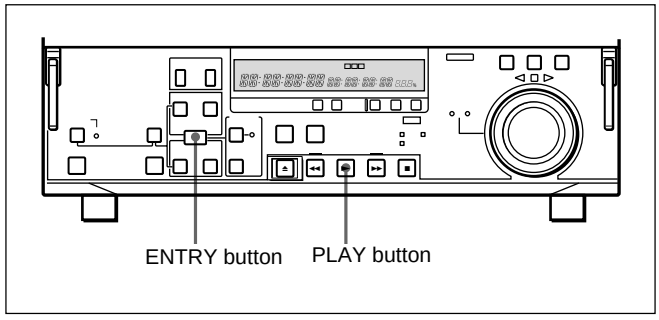
It is not possible to cue up to a virtual shot mark.

5-3-5 Reading in Shot Data

When there is shot data (time, device, and other information about the shooting) written on the tape, you can read it in and display it on the monitor.

Displaying the shot data

Holding down the ENTRY button, press the PLAY button.



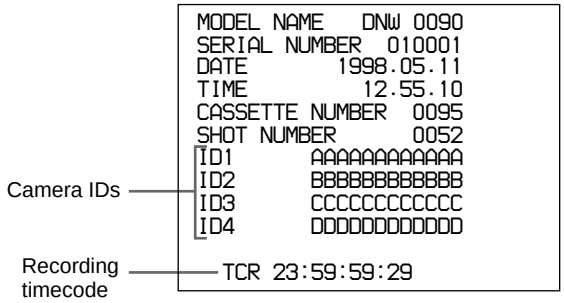
The tape is played back, and the shot data displayed.

To delete the shot data

Once again hold down the ENTRY button, and press the PLAY button.

Example of shot data display

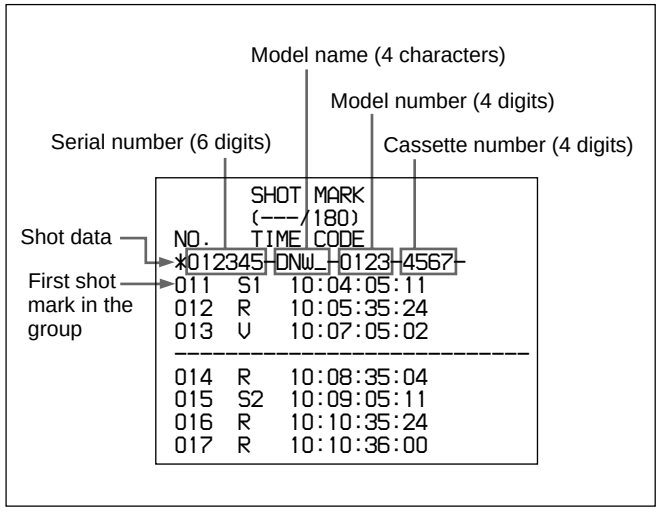
The shot data display appears as shown below.



The details in the shot data depend on the shooting conditions. If there is no shot data on a part of the tape because of the devices used, it appears as blank.

Displaying the shot data on the shot mark list

Turn the search dial to position the cursor on a separator in the shot mark list.
If there is shot data recorded when the immediately following shot mark was written, it appears in the display as shown in the following figure.



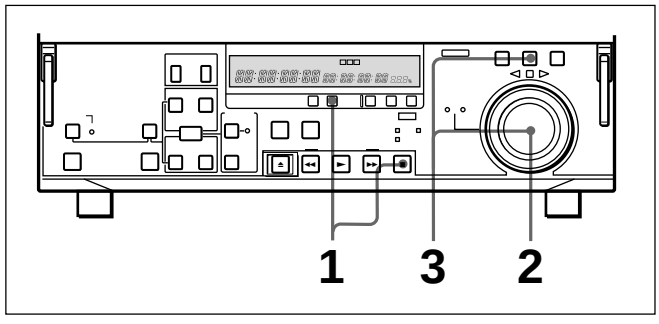
You can sort the shot marks in the list, based on the shot data. For details, see the next section.

5-3-6 Sorting Shot Marks

Based on shot data recorded on the tape, you can separate the shot marks by cassette, and sort them in timecode sequence.

To sort the shot marks

Use the following procedure.



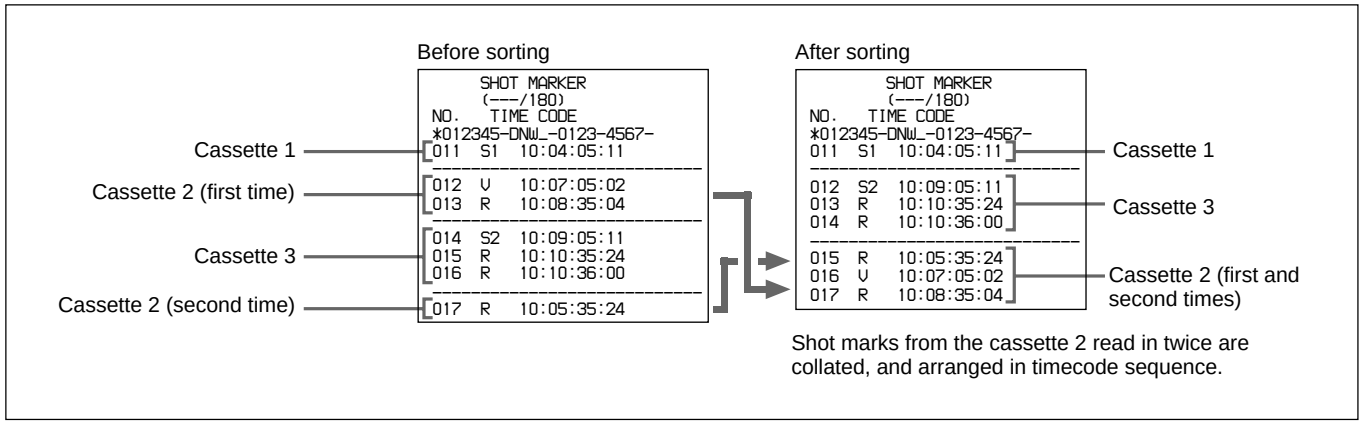
1 With the shot mark list displayed, hold down the STOP button and press the SET button.

2 Turn the search dial, and select “SORTING LIST”.

3 Hold down the JOG button and turn the search dial to change the setting to “ON”.

Sorting starts. When it ends, the setting indication returns to “OFF”.

For example, if shot marks have been read in twice from the same cassette, these can be collated as shown in the following figure.



gM

6-1 Menu System Configuration

The menu system of this unit comprises the basic menu and extended menu.

• Basic menu
This menu is used to make settings relating, for example, to the following.
- the hours meter
- the preroll time
- the character information superimposed on the output to the monitor
- switching between the 525/60 (NTSC) system and 625/50 (PAL) system
- the menu banks for retaining menu settings

For detailed information about menu operation relating to the hours meter, see Section 7-4 "Digital Hours Meter" (page 7-3).

• Extended menu
This menu is used to make a wide range of settings relating to the functions of this unit, for example, the control panel functions, video and audio control, and digital data processing.

6-2 Basic Menu

6-2-1 Items in the Basic Menu

The basic menu contains the following items.

In the "Settings" column of the table, the factory default settings are indicated by an enclosing box.

Item number	Item name	Settings
001	PREROLL TIME	**0S ... [5S] ... 30S:** Set the preroll time to between 0 and 30 seconds. A preroll time of at least 5 seconds is recommended when using this unit for editing.
002[a)]	CHARACTER H-POSITION	Adjust the horizontal screen position of the character information output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector and the SDI OUTPUT 3 (SUPER) connector for superimposed display on the monitor. **00 ... [1C] ... 3C (525 mode)/00 ... [19] ... 36 (625 mode):** The hexadecimal value 00 is for the far left of the screen and increasing the value moves the position of the characters to the right.
003[a), b)]	CHARACTER V-POSITION	Adjust the vertical screen position of the first line of the characters information output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector and the SDI OUTPUT 3 (SUPER) connector for superimposed display on the monitor. **00 ... [57] ... 6A (525 mode)/00 ... [5D] ... 60 (625 mode):** The hexadecimal value 00 is for the top of the screen and increasing the value lowers the position of the characters.

a) When setting items 002 and 003, watch the monitor screen, and adjust to the required state.

b) When displaying time code values, there is a slight time delay. Therefore, when creating a tape for off-line editing, the information inserted in the upper half of the screen may be delayed by one frame.

(Continued)

Item number	Item name	Settings
005	DISPLAY INFORMATION SELECT	Determines the kind of character information to be output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector and the SDI OUTPUT 3 (SUPER) connector when the CHARACTER switch on the subsidiary control panel is set to ON. **T&STA :** Time data display information and the unit's status. **T&UB:** Time data display information and the user's bits. **T&CTL:** Time data display information and CTL. **T&T:** Time data display information and time code (LTC or VITC). **TIME:** Time code (LTC or VITC) only. If there is a overlap between the setting of this item and the setting of the control panel, it is automatically avoided. For example, if CTL is selected on the control panel and this menu item setting is T&CTL, then CTL and LTC are output.
006	LOCAL FUNCTION ENABLE	Determines which buttons on the control panel are enabled when this unit is controlled from external equipment. **DIS:** All buttons and switches are disabled. **ST&EJ :** Only the STOP button and EJECT button are enabled. **ENA:** All buttons and switches are enabled.
007	TAPE TIMER DISPLAY	Determines whether to display the CTL count in 12-hour mode or 24-hour mode. **+ –12H :** 12-hour mode **24H:** 24-hour mode
009[a)]	CHARACTER TYPE	Determines the type of characters such as time code output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector and the SDI OUTPUT 3 (SUPER) connector for superimposed display on the monitor. **WHITE :** White letters on a black background. **BLACK:** Black letters on a white background. **W/OUT:** White outline letters. **B/OUT:** Black outline letters.
011[a)]	CHARACTER V-SIZE	Determines the vertical size of characters such as time code output from the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector and the SDI OUTPUT 3 (SUPER) connector for superimposed display on the monitor. **X1 :** Standard size **X2:** 2 times standard size
013	525/625 SYSTEM SELECT **Before using this menu item, consult the person responsible for the installation.**	Specify whether to enable switching between the 525 (NTSC) and 625 (PAL) systems. **OFF :** Do not enable system switching. **ON:** Enable system switching. Setting this item to ON and switching the system enables the unit to operate in the system switched to. *For the switching between 525/625 line systems, see page 6-6.* **Notes** • For the basic and extended menus, separate settings are saved for 525 (NTSC) and 625 (PAL) modes. When you switch systems, all menu items change to the settings established in the new system. (These are different from the settings for the mode before switching.) • When the DNW-A65 is used in the 625 mode or when the DNW-A65P is used in the 525 mode, Betacam and Betacam SP tape can only be played back in the simple playback mode.

a) When setting items 009 and 011, watch the monitor screen, and adjust to the required state.

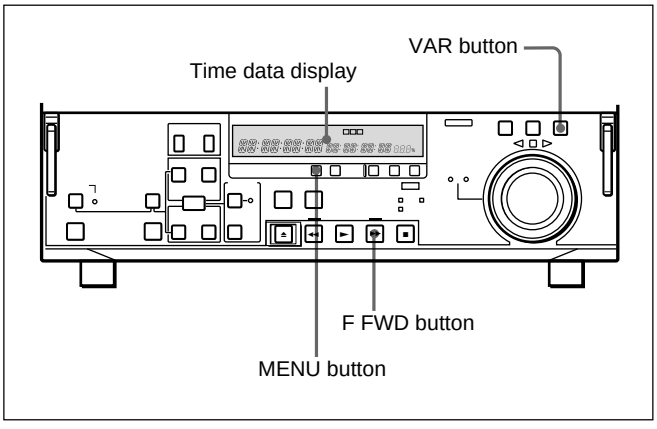
Item number	Item name	Settings
B01	RECALL BANK 1	Set to ON to recall menu settings from menu bank 1.
B02	RECALL BANK 2	Set to ON to recall menu settings from menu bank 2.
B03	RECALL BANK 3	Set to ON to recall menu settings from menu bank 3.
B04	RECALL BANK 4	Set to ON to recall menu settings from menu bank 4.
B11	SAVE BANK 1	Set to ON to save current menu settings to menu bank 1.
B12	SAVE BANK 2	Set to ON to save current menu settings to menu bank 2.
B13	SAVE BANK 3	Set to ON to save current menu settings to menu bank 3.
B14	SAVE BANK 4	Set to ON to save current menu settings to menu bank 4.
B20	RESET SETUP	Set to ON to reset current active settings to factory default values.

6-2-2 Basic Menu Operations

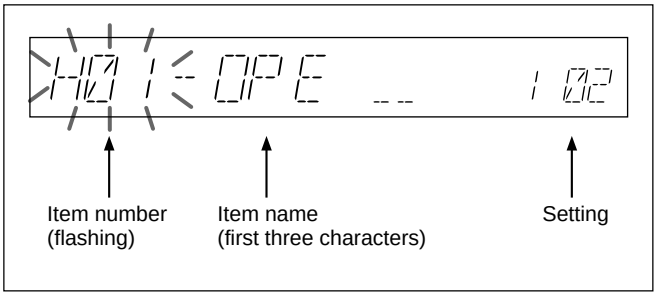
This section describes the basic menu displays and how to change the settings.

For information about how to use item 013, see the section "Switching between 525/625 line systems (menu item 013)" (page 6-6), and for information about how to use items B01 to B14, see the section "Menu bank operations (menu items B01 to B14" (page 6-8).

Displaying the menus

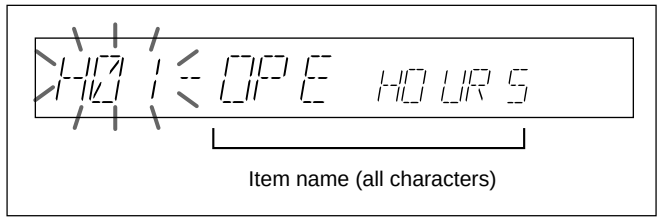


Press the MENU button, turning it on.
The F FWD button and VAR button light, and the setting of the currently selected menu item appears in the time data display area 1 and 2.



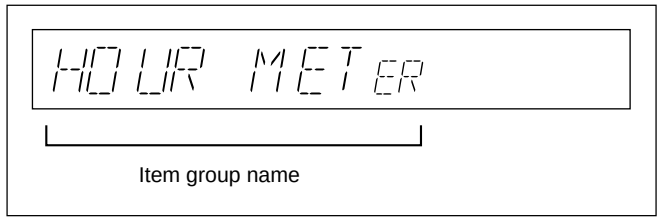
To display the full item name

Hold down the F FWD button.



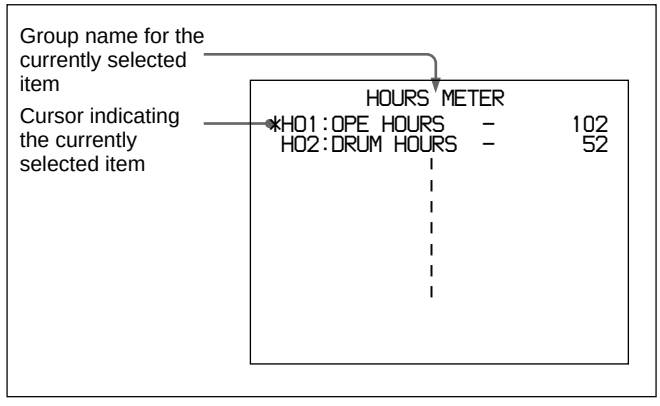
To display the item group name

Items in the menu are arranged in groups, by the 100's digit of the item number. To display the name of the group to which the currently selected item belongs, hold down the VAR button.



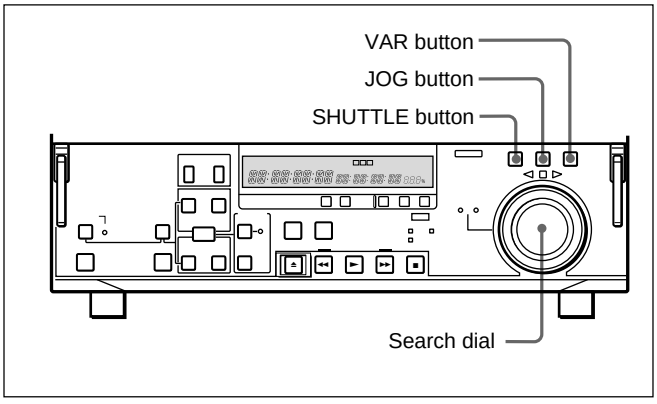
To display menus on the monitor

Set the CHARACTER switch on the subsidiary control panel to ON, then press the MENU button. You can now view the menu as shown in the following figure, on a monitor connected to the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector or the SDI OUTPUT 3 (SUPER) connector.


Group name for the currently selected item
Cursor indicating the currently selected item
HOURS METER
*H01:OPE HOURS - 102
H02:DRUM HOURS - 52

http://getMANUAL.com

Changing the currently displayed menu item



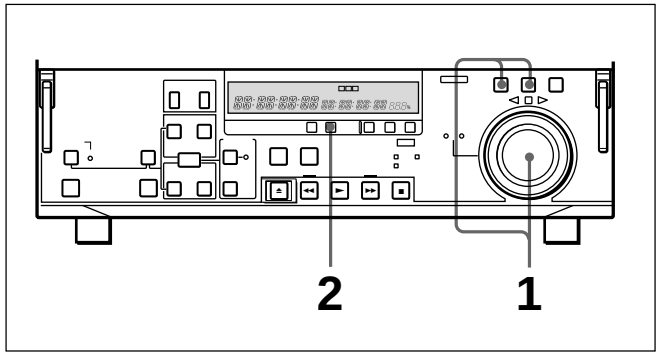
Turn the search dial.
Turning the search dial in the forward direction increments the item number, and turning it in the reverse direction decrements the item number.
If you press the SHUTTLE button or JOG button, turning it on, then turn the search dial, the item number changes at a rate depending on the search dial position (when the SHUTTLE button is lit) or on the search dial rotation rate (when the JOG button is lit).

To skip from one item group to the next

Hold down the VAR button, and turn the search dial.

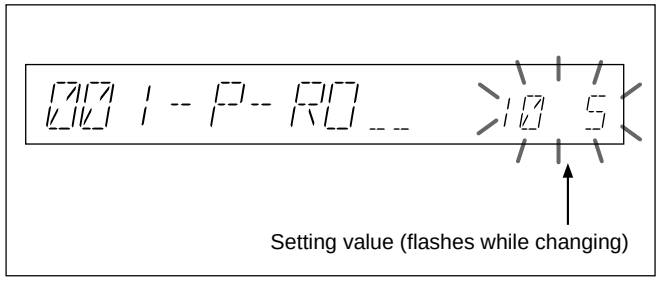
Changing a menu item setting value

To change the setting value of the currently displayed menu item, use the following procedure.



1 Holding down the SHUTTLE button or JOG button, turn the search dial.

The setting value changes at a rate depending on the search dial position (when the SHUTTLE button is lit) or on the search dial rotation rate (when the JOG button is lit).



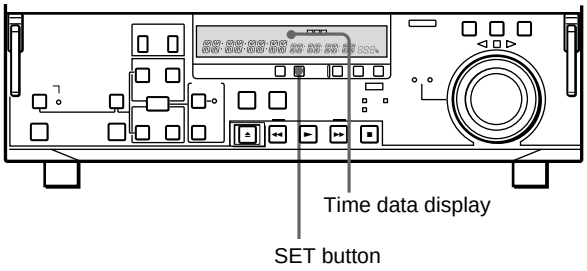
2 When the desired setting value is displayed, press the SET button.

This saves the new setting value, and the menu display disappears from the time data display area.

To abandon making a change

Press the MENU button before pressing the SET button.
The menu display disappears from the time data display area, without the new setting value being saved.

Resetting the menu settings to their factory default values (menu item B20)



1 Set menu item B20 RESET SETUP to ON.

"PUSH SET BTN" appears in the time data display area 1 and 2, and "Push SET button" appears on the monitor screen.

2 Press the SET button.

The current active menu settings *(see page 6-8)* are reset to their factory default settings.

3 Press the SET button again.

The settings are saved and the menu display disappears from the time data display area.

Switching between 525/625 line systems (menu item 013)

Using the following procedure, you can set basic menu item 013, 525/625 SYSTEM SELECT, to "ON", and then switch between 525 (NTSC) and 625 (PAL).

Notes

- Before carrying out this operation, consult the person responsible for the installation.
- When you use an external video reference signal after you switch between 525 and 626 systems, make sure that it corresponds to your new system.

Note on using the DNW-A65 in 625 mode

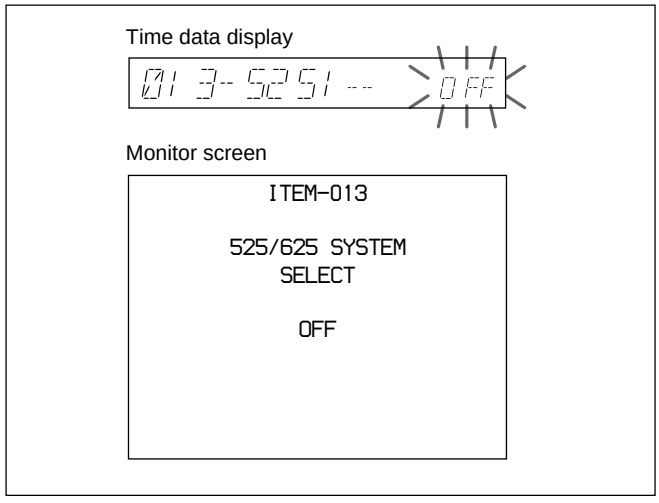
If you switch to 625 mode, Betacam and Betacam SP format can be played back in 625 mode, but only in the simple playback mode.

Note on using the DNW-A65P in 525 mode

If you switch to 525 mode, Betacam and Betacam SP format can be played back in 525 mode, but only in the simple playback mode.

1 Select menu item 013.

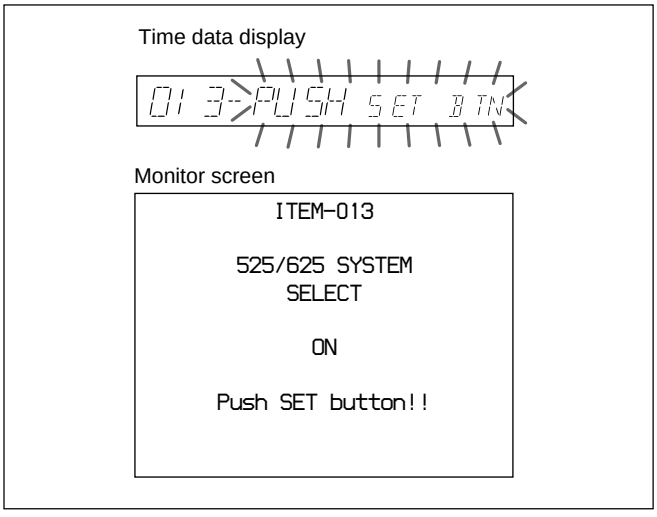
The time data display and the monitor[1)] screen show the following displays.



1) A monitor connected to the COMPOSITE VIDEO OUTPUT 3 (SUPER) connector or the SDI OUTPUT 3 (SUPER) connector

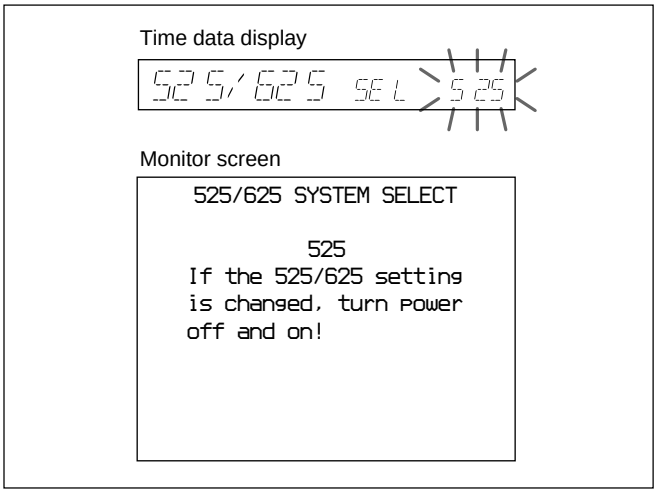
2 Holding down the JOG button, turn the search dial to change the setting from “OFF” to “ON”.

The displays change as follows.



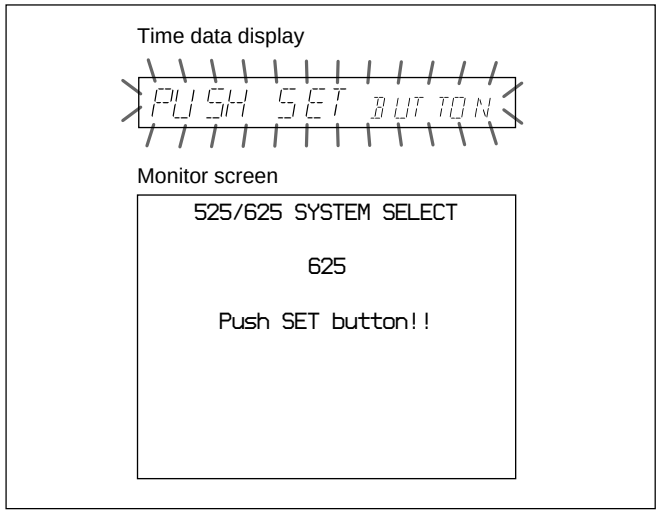
3 Press the SET button.

The displays change as follows.



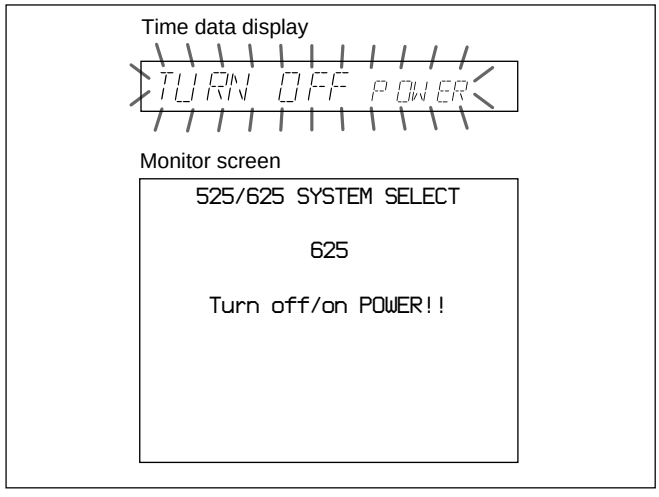
4 Holding down the JOG button, turn the search dial to change the setting from “525” to “625”.

The displays change as follows.



5 Press the SET button.

The displays change as follows.



To abandon the 525/625 setting operation

Press the MENU button a required number of times to exit from the menu.

6 Turn the POWER switch off momentarily, then on again.

This switches from a 525 (NTSC) to 625 (PAL) system; the 525 indicator goes off, and the 625 indicator lights.
The menu settings disappear from the time data display, which returns to the normal indications.

Menu bank operations (menu items B01 to B14)

This unit allows four different complete sets of menu settings to be saved in what are termed “menu banks” numbered 1 to 4. Saved sets of menu settings can be recalled for use as required.

To jump to menu item B01

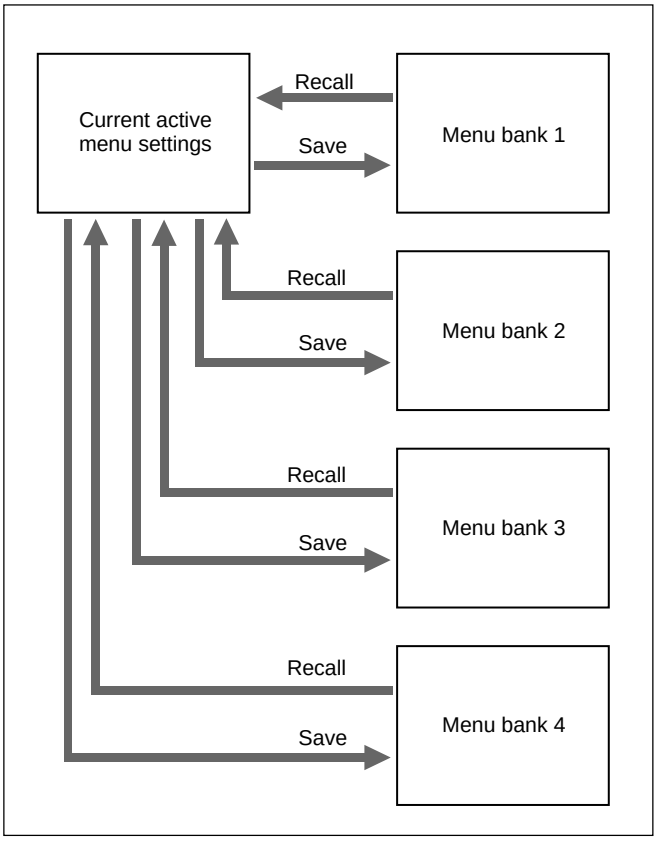
You can recall any required menu item by turning the search dial after pressing the MENU button.
If you press the MENU button first, then the CTL/TC/UB button, you can jump directly to menu item B01 or H01. The recalled menu item toggles between B01 and H01 every time you press the CTL/TC/UB button.

Saving the current active menu settings

Set one of menu items B11 SAVE BANK 1 to B14 SAVE BANK 4 to ON, depending on which of the menu banks you wish to save in, then press the SET button.

Recalling settings from a menu bank

Set one of menu items B01 RECALL BANK 1 to B04 RECALL BANK 4 to ON, depending on which of the menu banks you wish to recall from, then press the SET button.



6-3 Extended Menu

6-3-1 Items in the Extended Menu

The extended menu contains the following items.
In the “Settings” column of the table, the factory default settings are indicated by an enclosing box.

Menu items in the 100s, relating to the control panels

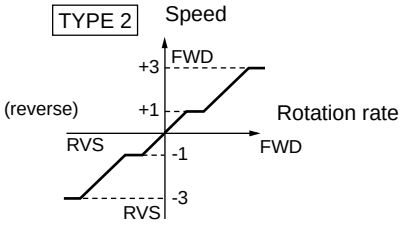
Item number	Item name	Settings
101	SELECTION FOR SEARCH DIAL ENABLE	Select how the unit enters the search mode. **[DIAL] :** Turning the search dial switches to search mode. **KEY:** One of the JOG, SHUTTLE, and VAR buttons must be pressed to switch to search mode.
102	MAXIMUM SPEED	Select the fast forward and rewind tape speed during tape playback, and the search mode speed during playback from tape or hard disk. **[MAX] :** Perform fast forward, rewind, and search mode playback at the maximum speeds. **MX/24:** Perform fast forward and rewind at the maximum speeds, and search mode playback at up to 24 times normal speed. **X24:** Perform fast forward and rewind at 24 times normal speed, and search mode playback at up to 24 times normal speed. **Maximum fast forward and rewind speeds** • Analog cassette: 35 times (DNW-A65) or 42 times (DNW-A65P) normal speed. • Digital cassette: 78 times normal speed **Maximum search mode speeds** • Analog cassette: 35 times (DNW-A65) or 42 times (DNW-A65P) normal speed. • Digital cassette: 78 times normal speed
103	AUDIO SELECTED LINE OUT	Select the output signal to the MONITOR OUTPUT connectors. **[MANU] :** Output the signals selected by the AUDIO MONITOR SELECT buttons on the upper control panel. **AUTO1:** Output stereo, using the AFM channels (3 and 4) for playback from metal tape, and the LNG channels (1 and 2) for playback from oxide tape. **AUTO2:** Output the signals selected by the AUDIO MONITOR SELECT buttons on the upper control panel, but during variable speed playback, if AFM is selected, automatically switch to LNG.
104	AUDIO MUTING TIME	Select the length of time for which audio muting occurs when the unit switches to playback either from stopped or from still playback in the search mode. **[OFF]:** Set the audio muting time to zero (i.e. no muting). **0.1S ... 1.0S:** Set the audio muting time from 0.1 seconds to 1.0 second, in 0.1-second increments.
105	REFERENCE SYSTEM ALARM	Select whether or not to display a warning when no video/audio reference signal is input to the REF. VIDEO INPUT connector. **OFF:** No warning. **[ON]:** Flash the STOP button as a warning.
106	CAPSTAN LOCK	Select the capstan servo lock mode. **[SW]:** The capstan servo lock mode is determined by the CAPSTAN LOCK switch on the subsidiary control panel. **2F:** The capstan servo locks every two fields regardless of the setting of the CAPSTAN LOCK switch on the subsidiary control panel. **4F:** The capstan servo locks every four fields regardless of the setting of the CAPSTAN LOCK switch on the subsidiary control panel. **8F (For 625 mode only):** The capstan servo locks every eight fields regardless of the setting of the CAPSTAN LOCK switch on the subsidiary control panel.

(Continued)

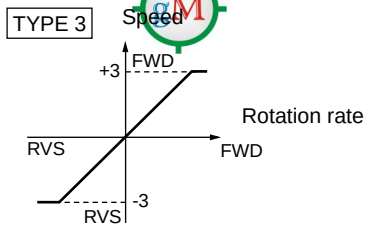
Menu items in the 100s, relating to the control panels (Continued)

Item number	Item name	Settings
111	TSO/FEED PLAY	Select whether to enable tape speed override mode or feed play mode. **DIS :** Disable both tape speed override mode and feed play mode. **TSO:** Enable tape speed override mode. **FEED:** Enable feed play mode.
115	PHASE LOCK IN VARIABLE X3	Select whether or not to lock the capstan phase in X3 variable speed play mode. **OFF :** Do not lock. **ON:** Lock.
116	JOG DIAL RESPONSE	Select the tape speed characteristics for the jog dial rotation rate (VTR commands). **TYPE1 :** Tape speed varies linearly over the range –1 to +1. **TYPE2:** Tape speed varies stepwise as shown in the figure below[a)] over the range –3 to +3. (Characterized by a zone around –1 and +1 where the tape speed is independent of the rotation rate) **TYPE3:** Tape speed varies linearly over the range –3 to +3, as shown in the figure below[b)]. **TYPE4:** Tape speed varies stepwise as shown in the figure below[c)] over the range –2 to +2. (Characterized by a zone around –1 and +1 where the tape speed is independent of the rotation rate)
117	CONTROL PANEL SELCTION	Select the control panel function when the CONTROL PANEL switch on the subsidiary control panel is set to EXT. **SW :** Only the control panel connected to the external control connector on the connector panel functions. **PARA :** Both the control panel connected to the external control connector and the control panel of this unit function.

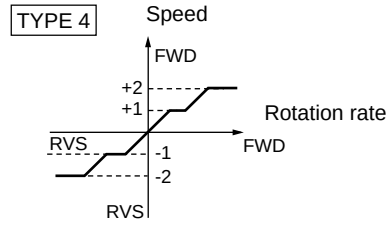
a)



b)



c)



Menu items in the 100s, relating to the control panels (Continued)

Item number	Item name		Settings
118	KEY INHIBIT SWITCH EFFECTIVE AREA		Select which switches and buttons can be operated when the KEY INHIBIT switch on the subsidiary control panel is set to ON. The following sub-items control different sets of switches and buttons independently.
	Sub-item		
	1	REMOTE SELECT	Select whether the REMOTE 1(9P) and 2(50P) buttons in the upper control panel is enabled. **DIS:** Disabled. **ENA:** Enabled.
	2	MONITOR SELECT	Select whether the audio signal selection buttons in the upper control panel are enabled. **DIS:** Disabled. **ENA:** Enabled.
	3	CONTROL PANEL	Select which switch and button operations can be carried out from the control panel of this unit or an external control panel connected to this unit. **DIS:** All switches and buttons are disabled. **DMC:** All switches and buttons for DMC playback operations are disabled. **ENA:** All switches and buttons are enabled.
119	VARIABLE SPEED LIMIT IN KEY PANEL CONTROL		Select the playback speed range when carrying out playback in variable mode from the control panel of this unit. **OFF:** For a digital tape, from –1 to +2 times normal speed; for an analog tape, from –1 to +3 times normal speed. **ON:** For both digital and analog tapes, from 0 to +1 times normal speed.
120	CTL LOCK IN VAR/SHTL		Select whether the tape transport should be phase-locked to the CTL signal during playback in variable or shuttle mode. **OFF:** Not phase-locked. **ON:** Phase-locked at the following speeds: –1, –0.5, 0.5, 1.0 and 2.0 times normal.

Menu items in the 200s, relating to the remote control interface

Item number	Item name	Settings
201	PARA RUN	Select whether or not to use synchronized operation for two or more VTRs (including players). **DIS:** No synchronized operation. **ENA:** Use synchronized operation. **Note** To use synchronized operation for two or more VTRs, set item 201 to “ENA” on all of the VTRs.
202	CF FLAG (valid only in 625 mode)	Select the mode for locking to the color framing sent from the remote controller. **8F:** Eight-field locking mode **4F/8F:** Four- or eight-field locking mode

Menu items in the 300s, relating to editing operations

Item number	Item name	Settings
301	VAR SPEED RANGE FOR SYNCHRONIZATION	Select the playback speed range when carrying out playback in variable mode from a remote control unit connected to the REMOTE-1 IN (9P) connector or REMOTE-1 OUT (9P) connector. **[–1~+2]:** For a digital tape, from –1 to +2 times normal speed; for an analog tape, from –1 to +3 times normal speed. **~+2.3 :** For a digital tape, from –1.5 to +2.3 times normal speed; for an analog tape, from –1.5 to +3.45 times normal speed. **WIDE:** Undefined.
302	CAPSTAN RE-LOCKING DIRECTION	**In 525 mode** When the CAPSTAN LOCK switch on the subsidiary control panel is set to 4FD select whether the capstan servo should lock by accelerating or decelerating. **[DECEL]:** Lock by decelerating. **ACCEL:** Lock by accelerating.
		In 625 mode When the CAPSTAN LOCK switch on the subsidiary control panel is set to 4FD or 8FD select whether the capstan servo should lock by accelerating or decelerating. **DECEL:** Lock by decelerating. **[ACCEL]:** Lock by accelerating.
306	DMC INITIAL SPEED	Select the initial speed automatically set when carrying out DMC playback. **[MANUAL]:** The speed determined by the rotation of the search dial. **PLAY:** Normal playback speed. **STILL:** Stationary. **±0.03~±1, +2**: Speed set in the range ±0.03 to +2 (select from +2, ±1, ±0.5, ±0.2, ±0.1, ±0.03).
307	AUTO-DELETION FOR INCONSISTENT DATA	Select what happens when an erroneous DMC playback control point is set. **[MANU]:** A warning is given by flashing the DELETE button on the lower control panel. The operator must manually delete the unnecessary DMC playback control points or correct the erroneous DMC playback control point. **NEG&E:** When inconsistent DMC playback control points are set, such as a speed variation end point is before a speed variation start point, or an on-air end point is before an on-air start point, or when too many DMC playback control points are specified, the previously set DMC playback control point is deleted. **NEG:** When inconsistent DMC playback control points are set, such as a speed variation end point is before a speed variation start point, or an on-air end point is before an on-air start point, the previously set DMC playback control point is deleted. When too many DMC playback control points are specified, the DELETE button on the control panel flashes to give a warning. **Note** Pressing the button corresponding to a DMC playback control point to be deleted and the DELETE button simultaneously, deletes the DMC playback control point. If an erroneous DMC playback control point is set (the DELETE button is flashing), DMC playback is not executed.
320	DIGITAL AUDIO PROCESS ON EDIT POINT	Select the treatment of audio at edit points. **CUT:** Carry out a cut (possibly resulting in audio discontinuities at the edit point). **[FADE]:** Fade out and fade in.

Menu items in the 400s, relating to preroll

Item number	Item name	Settings
401	FUNCTION MODE AFTER CUE-UP	Select the state that the unit goes into after a cuing-up operation. **STOP:** Stops (the "STOP mode"). **STILL:** Still playback (in search mode). **Note** When controlling this unit from an editor with the standard constants set, select "STOP".
402	TIME REFERENCE FOR PREROLL	When prerolling a tape with timecode discontinuities, select whether or not to use CTL pulses to count timecode from before a discontinuity. **CTL:** Use CTL pulses to count timecode. **TC:** Do not use CTL pulses to count timecode.
403	AUTOMATIC PREROLL REFERENCE ENTRY	Select whether or not the Speed Variation start point is automatically set by pressing the PREROLL button, when the Speed Variation start point is not set before starting preroll. **DIS:** Speed Variation start point is not set automatically. **ENA:** Speed Variation start point is set automatically.
405	CUEUP BY CTL	Select the tape transport mode when cuing. This setting is valid only when the CTL/TC/UB button on the lower control panel is set to CTL. **CAP:** During cuing up, the tape transport is in the "pinch ON" state (maximum tape speed 10 times normal). **REEL:** During cuing up, the tape transport is in the "pinch OFF" state. As the tape approaches the cue up point and the tape speed drops, the tape transport switches to the "pinch ON" state.[a)] To give priority to editing accuracy, select "CAP".

a) When controlled from an editor (BVE-2000/9100 etc.), selecting "REEL" allows high-speed cuing up.

Menu items in the 500s, relating to tape protection

Item number	Item name	Settings
501	STILL TIMER	Select the time delay from the tape transport stopping (either the "STOP mode" or the still playback mode in search mode) until the unit automatically switches to the tape protection mode, in order to protect the video heads and the tape. **0.5S ... 8M ... 30M:** Set the value in the range 0.5 seconds to 30 minutes.
502	TAPE PROTECTION MODE FROM SEARCH	Select the operation of the protection mode to protect the video heads and tape when in the still playback mode in search mode (jog/shuttle). **STEP:** Step forward at 1/30 normal speed every 2 seconds. **STDBY:** Switch to "Standby OFF mode" (the unit not on standby). **T REL:** Switch to tension release mode (the tape tension slackened).
503	TAPE PROTECTION MODE FROM STOP	Select the operation of the protection mode to protect the video heads and tape when stopped (the "STOP mode"). **STDBY:** Switch to "Standby OFF mode" (the unit not on standby). **T REL:** Switch to tension release mode (the tape tension slackened).
504	DRUM ROTATION IN STANDBY OFF	Select whether the drum rotates in "Standby OFF mode". **OFF:** Drum does not rotate. **ON:** Drum rotates.
505	STILL TENSION	Select the tape tension state in the still playback mode. **NORM:** Normal tape tension is maintained during still playback mode, ready for playback. **LOOSE:** Reduce the tape tension further from the NORM setting. (Select "LOOSE" when the unit is on standby for a long period of still playback, for example, in a library management system (LMS).) **Note** When LOOSE is selected, playback cannot be guaranteed.

Menu items in the 600s, relating to the time code generator

Item number	Item name	Settings
606	TC OUTPUT SIGNAL IN REGEN MODE	Select the signal output from the TIME CODE OUT connector during normal (x1) speed playback. **TAPE:** The playback time code signal is output without regeneration. **REGEN:** The playback time code is output after regeneration.

Menu items in the 700s, relating to tape protection

Item number	Item name		Settings
703	BLANK LINE SELECT		Switch blanking on or off for individual lines in the vertical blanking interval. The Y/C signal and odd/even fields are blanked simultaneously. **Note** For playback of an analog Betacam cassette (Betacam SP, etc.) regardless of the setting of this item, the chrominance signal is blanked up to line 15.
	Sub-Item		
	0	ALL LINE	**- - -:** Specify the blanking for each line separately. **BLANK:** Regardless of the setting of other sub-items, blank all lines which can be specified in this menu item. **THROU:** Regardless of the setting of other sub-items, switch off blanking for all lines which can be specified in this menu item.
In 525 mode	12 ... 19	LINE 12 ... LINE 19	Specify blanking for lines 12 to 19. **BLANK:** Carry out blanking. **THROU:** Switch off blanking.
	20	LINE 20	Specify blanking for lines 20. **BLANK:** Carry out blanking. **HALF:** Carry out half-blanking. **THROU:** Switch off blanking.
In 625 mode	9 ... 22	LINE 9 ... LINE 22	Specify blanking for lines 9 to 22. **BLANK:** Carry out blanking. **THROU:** Switch off blanking.
	23	LINE 23	Specify blanking for line 23. **HALF:** Carry out half-blanking. **THROU**: Switch off blanking.
705	EDGE SUBCARRIER REDUCER MODE		During playback, in the playback circuit the edge subcarrier reducer (ESR) is automatically switched on or off according to the operation of the unit. If the color edges are not as good as with a proper signal, the ESR can be forced on. This item makes this selection. **AUTO:** ESR is switched on and off automatically. **ON:** ESR operation is forced on.

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Menu items in the 700s, relating to video control (Continued)

<table>
<tr><th>Item number</th><th>Item name</th><th>Settings</th></tr>
<tr><td>706</td><td>VERTICAL BLANKING V SHIFT</td><td>When the “Y-add” a) function is operative, when the playback signal is an odd field and the reference signal is an even field, the playback signal is shifted by 1H (1 line) to suppress the vertical movement of the playback picture. This item selects whether or not to apply a 1H shift to the vertical blanking interval.
ON: Carry out vertical blanking shift.
OFF: Do not carry out vertical blanking shift.

Note
If the 1H shift is applied during the vertical blanking interval, the signal recorded in line 21 may intermittently appear in jog or variable playback mode.</td></tr>
<tr><td>707</td><td>FORCED VERTICAL INTERPOLATION OFF</td><td>The “Y-add” function is normally switched on automatically during jog or variable playback. This item selects whether or not to force the “Y-add” function off.
AUTO: Automatically switch the “Y-add” function on.
OFF: Force the “Y-add” function off.</td></tr>
<tr><td rowspan="3">709</td><td>CAV LEVEL FORMAT</td><td>Select whether the analog component output should be D-1 or Betacam. (Selectable only in 525 mode)
<table>
<tr><th>Format</th><th>Color bars</th><th>Y video</th><th>V sync</th><th>R–Y/B–Y</th></tr>
<tr><td>D-1 CAV</td><td>100/0/100/0</td><td>700 mV</td><td>300 mV</td><td>700 mV</td></tr>
<tr><td>Betacam</td><td>100/7.5/77/7.5</td><td>714 mV</td><td>286 mV</td><td>700 mV</td></tr>
</table></td></tr>
<tr><td>Sub-Item</td><td></td></tr>
<tr><td>1</td><td>OUTPUT CAV LEVEL</td><td>Select the analog component output format.
B-CAM: Betacam
D1: D-1</td></tr>
<tr><td>710</td><td>INTERNAL VIDEO SIGNAL GENERATOR</td><td>Select the test signal to be output from the unit’s internal test signal generator. When the selection is other than “OFF”, the internal test signal generator operates and outputs the selected test signal.
OFF: No test signal is generated. (The unit operates normally.)
CB100: 100% color bar signal
CB75: 75% color bar signal
CB75R: 75% color bar signal (reverse)
BOW: Bowtie signal
PLSBR: Pulse & bar signal
MLTBS: Multi-burst signal
HSWP: H sweep signal
5STEP: 5-step signal
RAMP: Ramp signal
SH: Shallow ramp signal
RED: Red signal
GRAY: 50% flat signal
WHITE: 100% flat signal
BB: Black burst signal
SDI: SDI check field signal
NTC7: NTC 7 test signal (selectable only in 525 mode)
LN330: Line 330 test signal (selectable only in 625 mode)</td></tr>
</table>

a) The “Y-add” function is a circuit operation to interpolate the video signal vertically during jog or variable playback for the purpose of reducing the vertical movement of the playback picture.

(Continued)

Menu items in the 700s, relating to video control (Continued)

Item number	Item name		Settings
712	VIDEO PROCESS ON CAP LOCK 2FIELD		When the CAPSTAN LOCK switch on the subsidiary control panel or menu item 106 is set to 2FLD for 2-field playback, select whether or not to carry out a "picture shift". **OFF:** No picture shift. **ON:** Carry out picture shift. **Note** To eliminate the adverse effect of the residual chrominance subcarrier component in the Y signal that is the result of the Y/C separation, this unit automatically applies a shift to the playback image in the H direction, so that even in 2-field playback a satisfactory image can be obtained.
713	VIDEO SETUP REFERENCE LEVEL (When operating in 525 mode)		Set the video setup amounts to be removed from a Betacam playback signal, and to be added to a composite output signal. There are independent settings for a Betacam signal and a composite output signal (referred to below as an output signal). **Note** The setup amounts specified in this menu item have no connection with the SETUP (DNW-A65)/ BLACK LEVEL (DNW-A65P) knob on the subsidiary control panel.
	Sub-Item		
	0	MASTER LEVEL	When the Betacam playback signal and output signal settings are "MSTER" (master), the setup amount specified for this sub-item is removed from the Betacam playback signal, and is added to the output signal. **0.0% ... 7.5% ... 10.0%:** Setting in this range, in 0.5% increments.
	3	BETACAM PB LEVEL	**MSTER:** Set the Betacam playback signal to the master setting. **0.0% ... 7.5% ... 10.0%:** Set the setup amount to be removed from the Betacam playback signal in this range, in 0.5% increments.
	4	OUTPUT LEVEL	**MSTER:** Set the output signal to the master setting. **0.0% ... 7.5% ... 10.0%:** Set the setup amount to be added to the output signal in this range, in 0.5% increments.
714	VIDEO ADJUST RANGE		Select the variable range of the VIDEO and CHROMA controls when the PROCESS CONTROL switch on the subsidiary control panel is set to LOCAL. **–3~+3:** –3 dB to +3 dB **WIDE:** –∞ to +3 dB

Menu items in the 700s, relating to video control (Continued)
(Items 715 to 721: Settings for controlling the video processing system according to the menu settings.)

Item number	Item name	Settings
715	VIDEO GAIN CONTROL	Adjust the video output level. Default value: **800H**
716	CHROMA GAIN CONTROL	Adjust the chroma output level. Default value: **800H**
717	CHROMA PHASE CONTROL	Adjust the chroma phase. Default value: **80H**
718	SETUP LEVEL	Adjust the setup level (black level). Default value: **110H**
719	SYSTEM PHASE SYNC	Adjust the SYNC control on the subsidiary control panel. Default value: **80H**
720	SYSTEM PHASE SC	Adjust the SC control on the subsidiary control panel. Default value: **0H**
721	Y/C DELAY	For playback from an analog Betacam cassette, adjust the Y/C delay. Default value: **800H**

Note

When you make settings for items 715 to 721, set the PROCESS CONTROL switch on the subsidiary control panel to MENU. When set to MENU, all controls on the subsidiary control panel are disabled.

Menu items in the 700s, relating to video control (Continued)

Item number	Item name	Settings
726	H BLANKING WIDTH	Select the horizontal blanking width of a video output signal. **NARROW:** Digital blanking (narrow) **WIDE:** Analog blanking (wide) When analog blanking is selected, the horizontal blanking width complies with RS170A, and normally the blanking is widened and the image becomes narrower. It is recommended to select NARROW at the editing stage, then later, for broadcast transmission to select WIDE, to output a signal conforming to the standard.
728	OUTPUT SCH PHASE	Set the subcarrier H phase. **Default value:** 800H

Menu items in the 800s, relating to audio control

Item number	Item name	Settings
802	DIGITAL AUDIO MUTE IN SHUTTLE MODE	Set the digital audio muting conditions during shuttle playback. **OFF :** Not muted. **CUEUP:** Muted during cue-up or preroll operations. **FULL:** Muted in shuttle mode.
805	AUDIO MONITOR OUTPUT MIXING	Select the audio mixing method used for digital audio signals and Betacam playback analog audio signals supplied to the MONITOR OUTPUT connector. **ADD:** Simple addition. **RMS :** Root-mean-square. **AVE:** Simple average.
806	LEVEL METER SCALE	Select the mode in which digital audio levels are displayed. **PEAK0 :** Displays the audio level as negative values with the maximum level set to 0 dB. **REF 0:** Displays the audio level as positive and negative values with the reference level set to 0 dB.
807	AUDIO OUTPUT PHASE	Select the output timing of a digital audio playback signal (SDI and AES/EBU only). The reference position corresponds to a setting of 80H; when the setting is less than 80H, the output timing is advanced, and when it is higher than 80H, the output timing is delayed. (80H, 128 samples = approx. 2.7 ms, and 80H, 1 sample=approx. 20 µs) **0 ... 80 ... FF :** Setting in this range.
808	INTERNAL AUDIO SIGNAL GENERATOR	Select the operation of the internal audio test signal generator. When a setting other than “OFF” is selected, the signal from the internal audio test signal generator is output to all of the audio channels. **OFF :** No operation. **SILNC:** Silent signal. **1KHZ:** At 1 kHz, –20 dB FS sine wave is supplied to all audio input channels.
809	AUDIO LEVEL METER DIMMER CONTROL	Set the brightness of the audio level meters. **0 ... 7:** Set in this range. 0 is the brightest, and 7 the dimmest.
817	EMPHASIS	Select whether or not to apply emphasis to a playback analog audio signal before it is converted to a digital audio signal. **OFF :** No emphasis. **ON:** Apply emphasis.

Menu items in the 900s, relating to digital processing

Item number	Item name	Settings
903	FREEZE MODE	Select the freeze mode and timing. **FIELD:** Freeze a video field. Field may be odd or even, according to the timing. **FLD1:** Freeze an odd field. **FLD2:** Freeze an even field. **FRM12:** Freeze a frame consisting of an odd field and following even field. **FRM21:** Freeze a frame consisting of an even field and following odd field. Odd and even fields are distinguished by the reference video signal. Changing the menu setting during a freeze does not affect the freeze image. The setting is reflected the next time a freeze is carried out.
904	FREEZE CONTROL FROM KEY PANEL	Select the control panel operation for a freeze. **MOMNT:** A freeze is carried out while the button is held down. **LATCH:** When the button is pressed, a freeze is carried out, and this state is maintained when the button is released. During a freeze, if the same operation is repeated the freeze image is updated. The operation is as follows. • Press the DELETE button and TRIM + button on the control panel simultaneously to carry out a freeze. • Press the DELETE button and TRIM – button on the control panel simultaneously to end the freeze. Item 903 determines the details of a freeze.
905	AUTO FREEZE CONTROL	Set the auto freeze function operation (conditions for ending a freeze, etc.). In dynamic tracking playback (so-called variable, jog, shuttle, or normal play), if there is a sudden worsening of the channel condition (unrecordable signals), this function freezes the image. **DIS:** Disable the auto freeze function. **MODE1:** End the freeze when signals which can be recorded normally are restored. **MODE2:** End freeze automatically on playback after stopping. • The automatic freeze mode is determined by item 903. • The freeze is ended immediately, regardless of the above conditions, when this unit is switched to cue-up mode.
906	STOP FREEZE CONTROL	Select whether or not the STOP FREEZE function should operate. **DIS:** Does not operate. **ENA:** Operates.

6-3-2 Extended Menu Operations

In the extended menu, you can carry out the same operations as in the basic menu.

For details of basic menu operation, see Section 6-2-2, "Basic Menu Operations" (page 6-4).

Note

To access the extended menu, a setting on the internal SS-83 board is required.

For details, refer to the Maintenance Manual (Part 1).

gM

7-1 Removing a Cassette When Tape Slack Occurs

If tape slack occurs in the unit, it is necessary to remove the upper lid and sound baffle. This job should always be entrusted to a technician who has undergone service training.

For details, refer to Section 2-12, "Taking Out the Cassette in Tape Slacking", in the Maintenance Manual (Part 1).

7-2 Head Cleaning

To clean the video heads and audio heads, always use the special-purpose Sony BCT-5CLN cleaning cassette.
Follow the instructions with the cleaning cassette carefully, as inappropriate use of the cleaning cassette can damage the heads.

To carry out head cleaning, use the following procedure.

1 Insert the cleaning cassette.

2 Press the EJECT button and PLAY button simultaneously.

Head cleaning starts.

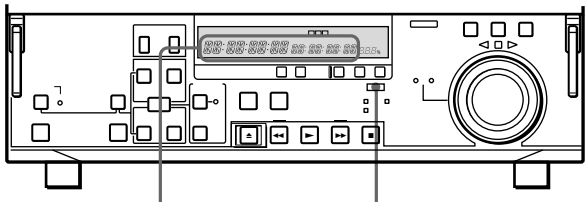
3 After a head cleaning operation which lasts for about 5 seconds, the cleaning cassette is automatically ejected.

Note

When carrying out head cleaning without using the automatic cleaning function described above, be sure to eject the cleaning cassette after use in order not to damage the heads.

7-3 Moisture Condensation

When the unit is suddenly moved from a cold to a warm location, or used in a very humid place, moisture from the air can condense on the head-drum. This is called moisture condensation. If the tape is run in this state, it can adhere to the drum. To prevent such a condition from occurring, the unit is provided with a moisture detecting function.
If moisture condenses on the head-drum while the unit is in use, “ERROR-10” is displayed in the time data display.



If this happens, the drum and capstan motors stop and the cassette is automatically ejected. Then, the durm starts to rotate again to dry its surface. In this state, the unit is not operable. When the moisture has evaporated, the error message disappears and the ALARM indicator goes off.

If “ERROR-10” appears and the ALARM indicator lights immediately after powering the unit on

Leave the unit powered on and wait until the error message disappears and the indicator goes off.
While the indicator is lit, you cannot insert a cassette. When the indicator goes off and the error message disappears, you can use the unit.

If you move the unit from a cold to a warm location

Leave the unit powered off for about 10 minutes, in order to give the unit time to detect moisture condensation.

7-4 Digital Hours Meter

The hours meter can display eight items of information, in corresponding display modes, about the operational history of the unit. Use it as a guide in scheduling periodic maintenance.

Display modes of the hours meter

H01: OPERATION mode
Displays the total number of hours the unit has been powered on in units of 1 hour.

H02: DRUM RUNNING mode
Displays the total number of hours the drum has run with tape threaded in units of 1 hour.

H03: TAPE RUNNING mode
Displays the total number of hours the unit has been in fast forward, rewind, playback or search (except for stop and still) mode in units of 1 hour.

H04: THREADING mode
Displays the total number of times tape has been threaded in the unit.

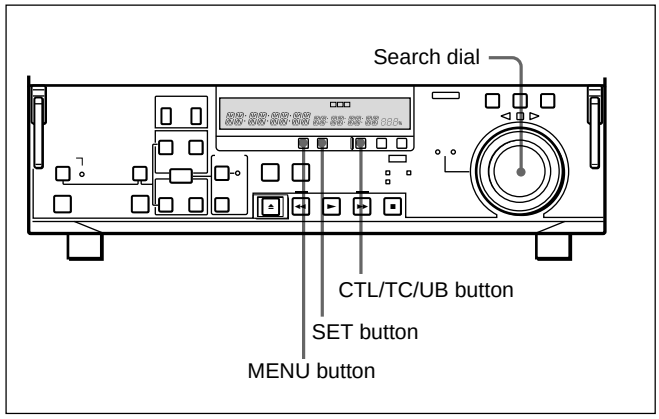
H12: DRUM RUNNING mode (resettable)
Same as H02 except that the count is resettable. This can be used as a guide in determining when to replace the drum.

H13: TAPE RUNNING mode (resettable)
Same as H03 except that the count is resettable. This can be used as a guide in determining when to replace such components as fixed heads and pinch rollers.

H14: THREADING mode (resettable)
Same as H04 except that the count is resettable. This can be used as a guide in determining when to replace, for example, the threading motor.

H15: TTP FAN (tape deck fan)
Displays the total number of hours the tape deck cooling fan has run since the count was last reset.

Displaying the hours meter



To display the hours meter
Press the MENU button, then turn the search dial to display the required item in the time data display.

To jump to H01
Press the MENU button, then the CTL/TC/UB button. Every time you press the CTL/TC/UB button, menu item H01 or B01 is recalled alternately.

To exit from the hours meter
Press the MENU button or SET button.

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Specifications

General

Power requirements
100 to 240 VAC, 50/60 Hz
Power consumption
195 VA
Peak inrush current
(1) Power ON, current probe method: 10A(100V) 20A(240V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 14A(230V)
Operating temperature
5°C to 40°C (41°F to 104°F)
Storage temperature
–20°C to +60°C (–4°F to +140°F)
Humidity 20 to 90%
Mass 27.9 kg (61 lb 8 oz)
Dimensions (w/h/d)
427 × 237 × 524 mm
(16 7/8 × 9 3/8 × 20 3/4 inches)

Tape transport system

Tape speed Betacam SX: 59.6 mm/s
Analog Betacam:
118.6 mm/s (DNW-A65)
101.5 mm/s (DNW-A65P)
Digital playback time
194 minutes with BCT-194SXLA
Analog Betacam playback time
90 minutes with BCT-90MLA
Fast forward/ rewind time
Approx. 3 minutes with BCT-194SXLA
Search speed
Shuttle mode Betacam SX: Still to approx. ±78 times normal playback speed
Betacam playback:
Still to ±35 times normal playback speed (DNW-A65)
Still to ±42 times normal playback speed (DNW-A65P)
Variable mode Betacam SX: –1 to +2 times normal playback speed
Betacam playback: –1 to +3 times normal playback speed
Jog mode Still to ±1 times normal playback speed
Servo lock time 0.5 seconds or less (from standby on)
Load/unload time 6 seconds or less
Cassettes that can be played back
Betacam SX cassette (S, L): BCT-12SX/22SX/32SX/60SX, BCT-64SXL/94SXL/124SXL/184SXL
Betacam SP cassette (S, L)
Betacam cassette (S, L)

Digital video system

Digital video signal system

Sampling frequency
Y: 13.5 MHz
R–Y/B–Y: 6.75 MHz
Quantization 8 bits/sample
Compression Coefficient recording system
Channel coding S-I-NRZI PR-IV
Error correction Reed-Solomon code

Analog component output

Bandwidth
Y DNW-A75: 0 to 4.5 MHz +0.5 dB/ –3.0 dB
DNW-A75P: 0 to 5.5 MHz +0.5 dB/ –3.0 dB
R–Y/ B–Y 0 to 2.0 MHz +0.5 dB/–3.0 dB
S/N ratio 56 dB or more
K factor (2T pulse)
1% or less

Analog composite output

Bandwidth (Y) DNW-A65: 0 to 4.5 MHz +0.5 dB/ –3.0 dB
DNW-A65P: 0 to 5.5 MHz +0.5 dB/ –3.0 dB
S/N ratio 54 dB or more
Differential gain 2% or less
Differential phase 2° or less
Y/C delay 20 ns or less
K factor (2T pulse)
1% or less
Output SCH phase
Based upon RS-170A/CCIR R.624-3
(Adjustable by using the menu)

Digital audio system

Digital audio (CH-1 to CH-4) signal format

Sampling frequency
48 kHz (synchronized with video)
Quantization 16 bits/ sample
Wow and flutter Below measurable level
Headroom 20 dB (or 18 dB, selectable)
Emphasis T1= 50 µs, T2=15 µs (on/off selectable by using the menu)

Analog output

A/D, D/A quantization
16 bits/sample
Frequency response
20 Hz to 20 kHz +0.5 dB/ –1.0 dB (0 dB at 1 kHz)
Dynamic range 90 dB or more (at 1 kHz, emphasis on)
Distortion 0.05% or less (at 1 kHz, emphasis on, reference level (+4 dBm))
Crosstalk –80 dB or less (at 1 kHz, between any two channels)

Analog Betacam playback (DNW-A65)

Video

		Metal tape	Oxide tape
Bandwidth	Y	30 Hz to 4.5 MHz +0.5 dB/ –4.0 dB	30 Hz to 4.1 MHz +0.5 dB/ –6.0 dB
	R–Y/ B–Y	30 Hz to 1.5 MHz +0.5 dB/–3.0dB	30 Hz to 1.5 MHz +0.5 dB/–3.0 dB
S/N ratio	Y	51 dB or more	48 dB or more
	R–Y/ B–Y	48 dB or more	45 dB or more
K factor (2T pulse)		2% or less	3% or less
LF non-linearity	Y	3% or less	
	R–Y/ B–Y	4% or less	
Y/C delay		20 ns or less	

Audio (LNG)

	Metal tape	Oxide tape
Frequency response (at 10 dB below reference level[a)])	50 Hz to 15 kHz +1.5 dB/ –3.0 dB	50 Hz to 15 kHz +3.0dB
S/N ratio (at 3% distortion level)	72 dB or more	50 dB or more (Dolby NR off)
Distortion (THD at 1kHz reference level[a)])	1% or less	2% or less
Wow and flutter	0.1% rms or less	

a) Reference level: +4 dBm

Analog Betacam playback (DNW-A65P)

Video

		Metal tape	Oxide tape
Bandwidth	Y	25 Hz to 5.5 MHz +0.5 dB/–4.0 dB	25 Hz to 4.0 MHz +0.5 dB/–6.0 dB
	R–Y/ B–Y	25 Hz to 2.0 MHz +0.5 dB/–3.0dB	25 Hz to 1.5 MHz +0.5 dB/–3.0 dB
S/N ratio	Y	48 dB or more	46 dB or more
	R–Y/ B–Y	48 dB or more	45 dB or more
K factor (2T pulse)		2% or less	3% or less
LF non-linearity	Y	3% or less	
	R–Y/ B–Y	4% or less	
Y/C delay		20 ns or less	

Audio (LNG)

	Metal tape	Oxide tape
Frequency response (at 20 dB below peak level[a)])	50 Hz to 15 kHz +1.5 dB/–3.0 dB	50 Hz to 15 kHz ±3.0dB
S/N ratio (at 3% distortion level) (CCIR 468-3 weighted)	68 dB or more	62 dB or more
Distortion (THD at 1kHz reference level[b)])	1% or less	2% or less
Wow and flutter (DIN45507 weighted)	0.1% rms or less	

a) Peak level: +8 dB above reference level
b) Reference level: +4 dBm

Processor adjustment range

Video level ±3 dB/ –∞ to +3 dB selectable
Chroma level ±3 dB/ –∞ to +3 dB selectable
Setup level (DNW-A65)
±30 IRE
Black level (DNW-A65P)
±210 mV
Y/C delay ±100 ns (in analog Betacam playback)
Chroma phase ±30°
System phase Sync: ±15 µs
SC: ±200 ns

Input connectors

REF. VIDEO INPUT
BNC (2 in loop through connection)
Black burst or composite sync
0.3 Vp-p, 75 Ω, sync negative

Output connectors

SDI OUTPUT
BNC (3 including 1 for character superimpose)
serial digital (270 Mbits/ s)
SMPTE 259 M/CCIR 656-III
SDTI (SX) OUTPUT
(Only available with the BKNW-118 option installed)
BNC (2)
SMPTE 305M
SDTI-CP OUTPUT
(Only available with the BKNW-124 option installed)
BNC (2)
SMPTE 305M, 326M
COMPONENT VIDEO OUTPUT
BNC (3 for 1 set)
Y: 1.0 Vp-p, Sync negative
R–Y/B–Y: 0.7 Vp-p, 75 Ω, with 100% color bar for DNW-A75P and with 100% or 75% color bar selectable for DNW-A75
COMPOSITE VIDEO OUTPUT
BNC (3 including 1 for character superimpose)
1 Vp-p, 75 Ω, Sync negative
AUDIO OUTPUT CH-1/2/3/4
XLR 3-pin, male (4)
+4 dBm at 600 Ω load, low impedance, balanced
AUDIO OUTPUT (AES/EBU) CH-1/2 and CH-3/4
BNC (2)
Complies with AES-3id-1995
MONITOR OUTPUT (L/R)
XLR 3-pin, male (2)
+4 dBm at 60 Ω load, low impedance, balanced
TIME CODE OUT
XLR 3-pin, male (1)
2.2 Vp-p, low impedance, balanced
PHONES JM-60 stereo phone jack
–∞ to –12 dBu at 8 Ω load, unbalanced

Remote connectors

CONTROL PANEL
29-pin, female
REMOTE1-IN(9P)
D-sub 9-pin, female
REMOTE1-OUT(9P)
D-sub 9-pin, female
RS-232C D-sub 9-pin, male
VIDEO CONTROL
D-sub 15-pin, male (for optional BVR-50/50P)
REMOTE 2 PARALLEL I/O (50P)
50-pin, female

Accessories supplied

RCC-5G 9-pin remote control cable (1)
PSW 4 × 16 screws for rack mounting (4)
Operation Manual (1)
Maintenance Manual Part 1 (1)

Optional accessories

BVR-50/50P TBC Remote Controller
BKNW-119 Control Panel
BKNW-121 Control Panel Case
BKNW-122 Control Panel Extension Kit
RMM-110/111 Rack Mount Adaptor
BCT-5CLN Cleaning Cassette Tape
AC power cord
• For customers in the U.S.A. and Canada
Part No. 1-557-377-11
Plug holder 3-613-640-01
• For customers in the United Kingdom
Part No. 1-782-165-11
Plug holder 3-613-640-01
• For customers in European countries other than the United Kingdom
Part No. 1-782-164-11
Plug holder 3-613-640-01
BKNW-118 SDTI (SX) Output Board
BKNW-124 SDTI-CP Output Board

Design and specifications are subject to change without notice.

Index

A

AC IN connector 2-17
AES/EBU digital audio 1-1
ALARM indicator 2-7
Analog
  output signal connections 3-2
  video/audio signal 1-1
Analog audio output section 2-15
AUDIO MONITOR SELECT buttons 2-2
Audio monitor signal output section 2-16
AUDIO OUTPUT (AES/EBU)
  connectors 2-16
AUDIO OUTPUT CH1 to CH4
  connectors 2-15
Audio test signal 6-18

B

Basic menu
  items 6-1
  operations 6-4
Betacam
  SX format 1-1
  SX/SP cassette 3-7
BETACAM SX indicator 2-7
BLACK LEVEL knob 2-12
BREAKER button 2-17

C

CAPSTAN LOCK switch 2-13
Capstan override function 4-4
Cassettes 3-7
CHARACTER switch 2-11
CHROMA knob 2-12
CHROMA PHASE knob 2-12
COMPONENT VIDEO OUTPUT
  connectors 2-15
COMPOSITE VIDEO OUTPUT
  connectors 2-15
Connections
  analog output signals 3-2
  digital output signals 3-1
Connector panel 2-14
CONTROL PANEL connector 2-17
CONTROL PANEL switch 2-11
Control panels 2-1
CTL/TC/UB button 2-4
CUE/PLAY button 2-8

D

DELETE button 2-7
DF/NDF switch 2-3
Digital
  AES/EBU 1-1
  output signal connections 3-1
  SDI/SDTI 1-1
Digital audio output section 2-16
Digital hours meter 7-3
DISPLAY FULL/FINE switch 2-2
Display section 2-5
DMC MODE button 2-7
DMC playback control section 2-7
DOLBY NR indicator 2-6
DOLBY NR switch 2-6
Drop frame mode 2-3, 3-5

E

EJECT button 2-9
Extended menu
  items 6-9
  operations 6-19
External device connectors 2-17

F

F FWD button 2-9
Features 1-1
Feed mode 4-5
Fluorescent display 2-5

G

GOOD SHOT REC INHIBIT
  indicator 2-7
GOOD SHOT switch 2-13
Ground terminal 2-17

H

Head cleaning 7-1
Head configuration 1-1

I

Indicator area 2-6
Indicators 2-7

J

JOG button 2-10
JOG indicator 2-10
Jog mode 4-3

K

KEY INHIBIT indicator 2-7
KEY INHIBIT switch 2-11

L

LEARN button 2-7
Level meters 2-2
LIST button 2-8
Location and function of parts
  connector panel 2-14
  lower control panel 2-4
  subsidiary control panel 2-11
  upper control panel 2-2
LTC 2-3

M

MARK button 2-8
MEMORY indicator 2-7
MENU button 2-4
Menu system
  basic menu 6-1
  extended menu 6-9
Moisture condensation 7-2
MONITOR OUTPUT connectors 2-16
Monitor/menu/display setting section 2-4

N

Non-drop frame mode 2-3, 3-6

O

Operation mode 3-6
Outputs
  analog audio 2-15
  analog video 2-15
  digital audio 2-16
  SDI 2-16

P

PB controls 2-2
PHONES jack and control 2-3
PLAY button 2-9
Playback
  dynamic motion control (DMC) 4-6
  feed mode 4-5
  jog mode 4-3
  normal 4-2
  shuttle mode 4-3
  using the capstan override function 4-4
  variable mode 4-4
Power supply section 2-17
POWER switch 2-2
Preparations for playback 4-1
PREROLL button 2-9
PRESET/MANUAL switches 2-11
PROCESS CONTROL switch 2-12

R

REC/ERASE indicator 2-8
REF. VIDEO INPUT connectors 2-15
Reference signal 3-3
Reference video input/analog output
  section 2-15
REMOTE 2 PARALLEL I/O (50P)
  connector 2-17
REMOTE buttons 2-3
REMOTE1-IN(9P) connector 2-17
REMOTE1-OUT(9P) connector 2-17
RESET button 2-5
REW button 2-9
RS-232C connector 2-17
RS-232C indicator 2-3

S

SC knob 2-13
SDI OUTPUT connectors 2-16
SDI video/audio 1-1
Search control section 2-10
Search dial 2-10
SERVO indicator 2-7
SET button 2-4
SET UP knob 2-12
Setup 3-4
Shot data 5-6
Shot mark function
  cueing up 5-6
  list operations 5-4
  operation menu 5-3
  operations 5-4
  overview 5-1
  reading 5-3
  sorting 5-7
  writing 5-3
Shot mark section 2-8
SHUTTLE button 2-10
Shuttle mode 4-3
SHUTTLE/VAR indicator 2-10
Specifications A-1
Speed display area 2-6
STANDBY button 2-9
STOP button 2-9
Subsidiary control panel 2-11
Superimposed character information 3-5
SYNC knob 2-12
System configurations 1-3

T

Tape transport control section 2-9
TC switch 2-3
Time code 2-3
TIME CODE OUT connector 2-16
Time code output section 2-16
Time code setting section 2-3
Time data 3-5
Time data display area 2-5
TOTAL/REMAIN button 2-5
TRIM buttons 2-7

U

Upper control panel 2-2

V

VAR button 2-10
Variable mode 4-4
VIDEO CONTROL connector 2-17
VIDEO knob 2-12
Video test signal 6-15
VITC field 3-6

Y

Y/C DELAY knob 2-12

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